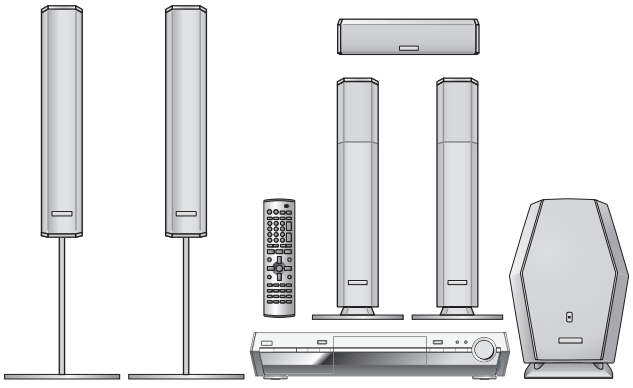


Panasonic®

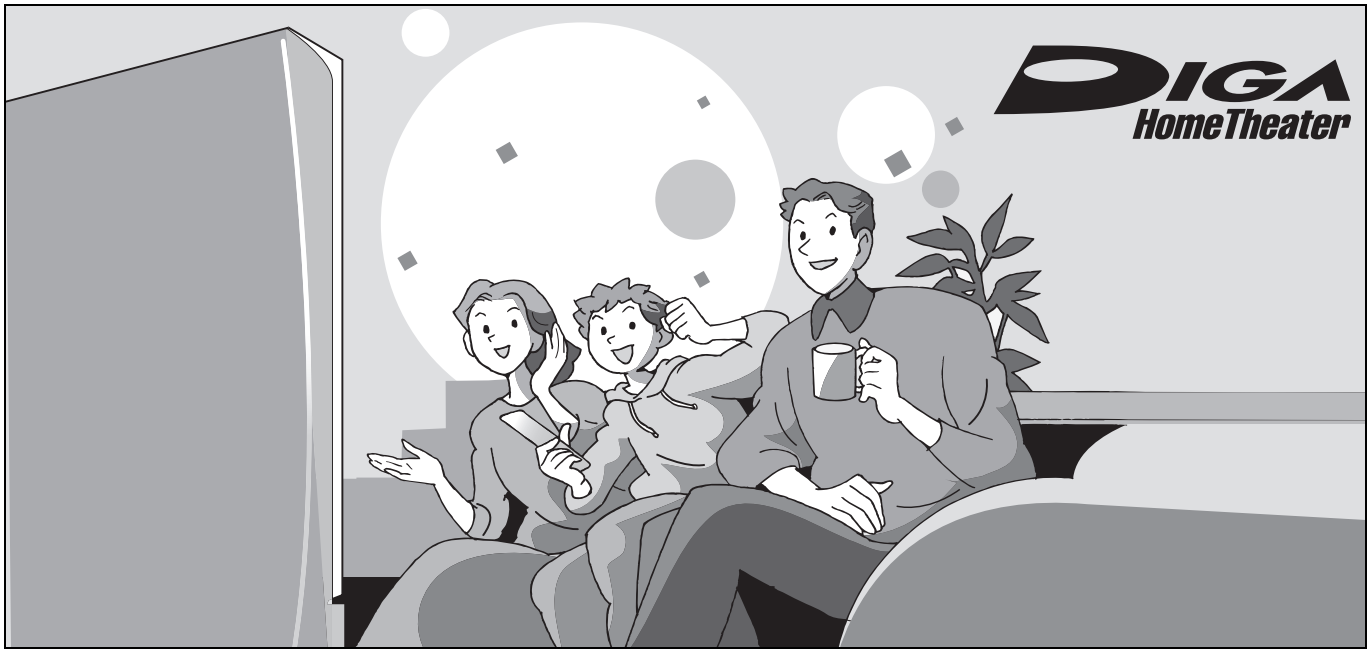
Operating Instructions

Recordable DVD Home Theater System

Model No. **SC-HT1500**

Operations Guide

Before using this product, perform setup and connections after carefully reading the Setup Guide.



DVD VIDEO RAM DVD AUDIO COMPACT disc DIGITAL VIDEO RAM COMPATIBLE RECORDER TV GUIDE ON SCREEN AVHDD HARD DISK DRIVE

Dear customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully.

Before connecting, operating or adjusting this product, please read these instructions completely.
Please keep this manual for future reference.

Region number supported by this unit

Region numbers are allocated to DVD players and software according to where they are sold.

- The region number of this unit is "**1**".
- The unit will play DVDs marked with labels containing "**1**" or "**ALL**".

Example:

For U.S.A. only
The warranty can be found on page 51.
For Canada only
The warranty can be found on page 50.

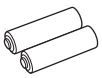
Accessories

Please check and identify the supplied accessories. Use numbers indicated in parentheses when asking for replacement parts.

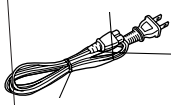
Only for U.S.A.: To order accessories, refer to "Accessory Purchases" on page 51.
Only for Canada: To order accessories, call the dealer from whom you have made your purchase.

- ☐ **1 Remote control** (EUR7624KY0)

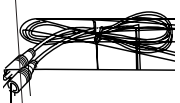
- ☐ **2 Batteries** for remote control



- ☐ **2 AC power supply cords** (RJA0065-A)
  - ●For use with this unit only. Do not use it with other equipment.



- ☐ **1 Video cable** (RJL1P016B15A)



- ☐ **1 75 Ω coaxial cable** (K1TXAAA00001)

- ☐ **1 System cable** (K1HA25HA0003)

- ☐ **1 AM loop antenna** (N1DAAAA00002)

- ☐ **1 FM indoor antenna** (RSA0007-L)

- ☐ **1 IR Blaster** (K2ZZ04C00001)

- ☐ **3 Speaker cables**
  1×4 m (13 foot) cable (
  2×10 m (33 foot) cables (
- ☐ **1 Sheet of speaker-cable s**
- ☐ **6 Speaker screws**
  2 washer screws (50015)
  4 long screws (3+30FN)

(U.S.A. only)
Product Registration Card
Please complete and return the included product registration card, or register via the Internet at: http://www.prodreg.com/panasonic/

■ Batteries

- ●Insert so the poles (+ and −) match those in the remote control.
- ●Do not use rechargeable type batteries.

Do not:
- ●Mix old and new batteries.
- ●Use different types at the same time.
- ●Heat or expose to flame.
- ●Take apart or short circuit.
- ●Attempt to recharge alkaline or manganese batteries.
- ●Use batteries if the covering has been peeled off.

Failure to follow these cautions can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.

Remove the batteries from the remote control if it is not going to be used for a long period of time. Store in

■ U

If the unit or
after batteries, please

■ U

Aim at (page 5), avoiding obstacles, at a maximum range of directly in front of the unit.

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Useful features

This Recordable DVD Home Theater System records high quality images to rapid random access capable HDD (Hard disk drive) or DVD-RAM. This has resulted in many new features that out perform older tape formats. The following information summarizes a few of these features.

Instant recording
You no longer need to search for empty disc space. By pressing the recording button, the unit finds available recording space and begins recording right away. There is no need to worry about overwriting already recorded content.

TV Guide On Screen™ system
The TV Guide On Screen™ system provides a handy electronic program guide (EPG) for checking what's on. Setting up to record a broadcast is easy too. Simply select the desired program from the displayed list. You can also search for desired programs alphabetically or by displaying only the programs in a certain category.

- TV Guide On Screen™ is available in the continental United States. In Canada, however, this service may not be available in some areas.

HDD recording
You can keep on recording your favorite programs to an internal HDD that is able to record up to 142 hours when using EP (8 Hour) mode.
You can also high speed transfer (dub) your favorite programs to DVD-RAM or DVD-R and create a backup disc.

Instant play
There is no need to rewind or search forward. Direct Navigator guides you to the beginning of the recorded video immediately.

Chasing playback
There is no need to wait until recording is complete. Without stopping recording, you can play the video currently being recorded from its beginning.

Simultaneous Recording and Playback
While recording, you can play another video program that was recorded previously.

Time Slip
During play and also while recording, you can jump to the scene you wish to view by specifying the skip time.

High-performance power supplies up to 800 W
Enables you to experience optimal theater sound performance with 6 speakers.

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	- SYNLIG OCH OSYNLIG LA
ÄR ÖPPNAD. BETRAKTA
RSEL	- SYNLIG OG USYNLI
UNNGÅ EKSPONE
NÅR DEKSEL ÅPNES.
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te a risk of electric shock

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ng and maintenance (servicing)
he literature accompanying the ap

it. Follow the safety instructions on the unit and the applicable safety instructions
ure reference.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to
jury from tip-over.
paratus during lightning storms or
periods of time.
d service personnel. Servicing is
n damaged in any way,
d, liquid has been
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safety purpose of the polarized
larized plug has two blades with one
grounding-type plug has two blades and a t
g prong. The wide blade or the third prong are
ed for your safety. If the provided plug does not fit into
r outlet, consult an electrician for replacement of the
bsolete outlet.

STEP 1 Setting up the TV Guide On Screen™ system

Preparation

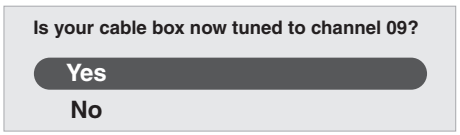
- Turn on the television and select the appropriate video input to suit the connections to this unit.
- When using the cable TV box, check the following.

After plugging the unit into your household AC outlet and pressing [⏻ POWER] to turn the unit on for the first time, the unit starts TV Guide On Screen™ system setup.

Even if you do not want to use the TV Guide On Screen™ system, complete the setup. You cannot use timer recording unless the setup is completed.

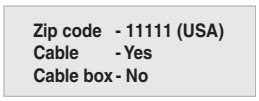
If you are using a cable TV box, set the following:

- Cable TV box connection channel (Ch2/Ch3/Ch4/L3)
  - –If you are connecting the cable TV box to this unit's IN3 (L3) terminal, select "L3".
  - –If you are connecting the cable TV box to this unit's RF terminal, select "Ch2", "Ch3" or "Ch4", according to the cable TV box setting.
- Cable TV box brand
  (Move down with [▼] for more brands. Select "Not Listed" if you cannot find your cable TV box on the list.)
- IR signal code
  Make sure your cable TV box is set to the channel that appears on screen and press [ENTER]. A test is performed.



  - –If the cable TV box has changed to channel 09, select "Yes" and press [ENTER].
  - –If the cable TV box is still set to the same channel, select "No" and press [ENTER]. Repeat this step until the cable TV box changes to channel 09.

■ The set contents are displayed together



- –If the information is correct, select "Yes, end setup" and press [ENTER].
- –If the information is not correct, select "No, repeat setup process" and press [ENTER] to start the setting again.

Once you confirm the input content, the following screen appears.

5 Press [ENTER].

A television reception screen or a blue background screen is displayed.

If you do not want to use TV Guide On Screen™ system
➡ page 41, Auto channel/clock settings

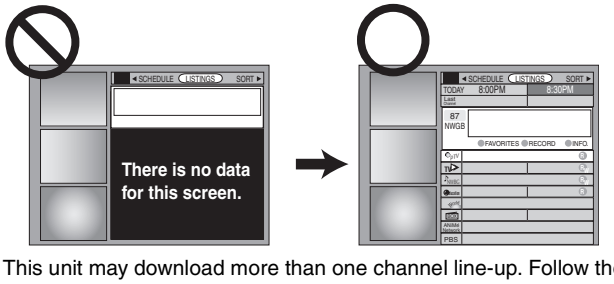
6 Press [⏻ POWER].

Leave the unit turned off until the unit downloads the television program list. This may take up to a maximum of 24 hours.

When the unit is connected to a cable TV box.

- The cable TV box must be turned on in order to download the television program list.
- Note that the television program list may not be downloaded correctly if you change the channel of the cable TV box while the unit is turned off.

If you find "There is no data for this screen" on the television when you turn the unit on, the unit has not yet downloaded the program list.



This unit may download more than one channel line-up. Follow the on-screen guidance and select one of the channel line-ups (➡ page 19).

To use immediately (Manual Clock Setting)

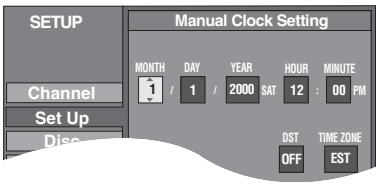
Set the clock manually.
Please note that the program list is not displayed until the unit downloads it. Timer program recording is only possible manually.

1 Press [FUNCTIONS].

2 Press [▲, ▼] to select "SETUP" and press [ENTER].

3 Press [▲, ▼] to select "Set Up" and press [▶].

4 Press [▲, ▼] to select "Manual Clock Setting" and press [ENTER].



5 Press [◀, ▶] to select the item you want to change and press [▲, ▼] to change the setting.

6 Press [ENTER].

The clock starts.

To exit the screen
Press [RETURN] several times.

- DST (Daylight Saving Time): ON or OFF
  If you select "ON", the clock is advanced one hour starting at 2 a.m. on the first Sunday in April and ending at 2 a.m. on the last Sunday in October.
- TIME ZONE shows the time difference from Greenwich meantime (GMT).

EST (Eastern Standard Time)	= GMT −5
CST (Central Standard Time)	= GMT −6
MST (Mountain Standard Time)	= GMT −7
PST (Pacific Standard Time)	= GMT −8
AST (Alaska Standard Time)	= GMT −9
HST (Hawaii Standard Time)	= GMT −10

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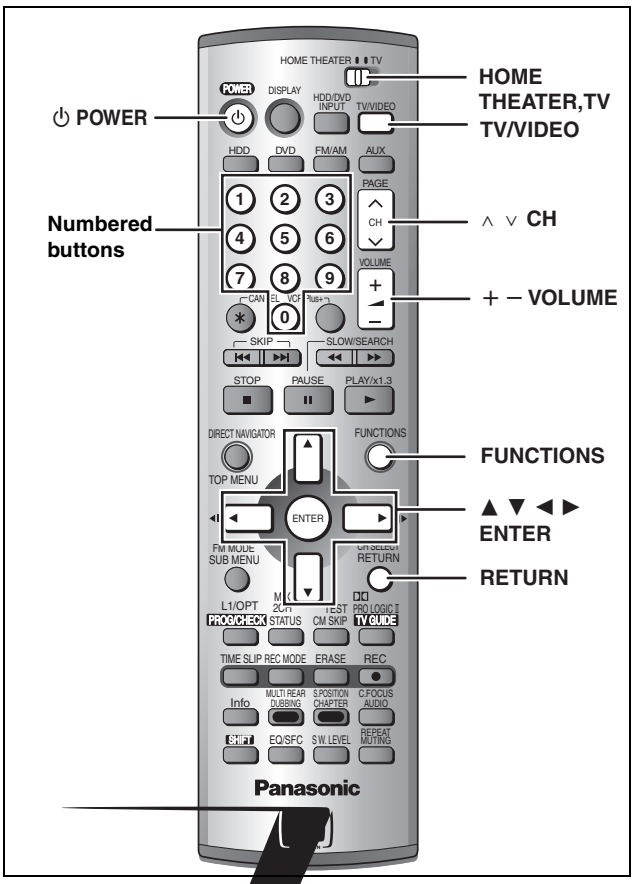
STEP 2 Set up to match your television and remote control



Selecting television type

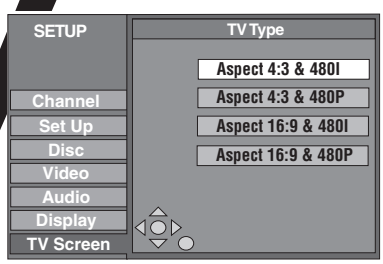
You do not have to change the setting when connected to a 4:3 standard aspect television that is not compatible with progressive output (➡ page 45).

1 Press [FUNCTIONS].

2 Press [▲, ▼] to select "SETUP" and press [ENTER].

3 Press [▲, ▼] to select "TV Screen" and press [▶].

4 Press [▲, ▼] to select "TV Type" and press [ENTER].



- Aspect 4:3/Aspect 16:9:

4:3 standard aspect television 16:9 widescreen television

- 480P/480I:
  Select "480P" if the television is compatible with progressive output.

5 Press [▲, ▼] to select the item and press [ENTER].

Television operation

You can configure the remote control TV operation buttons to turn the television on/off, change the television input mode, select the television channel and change the television volume.

1 Switch [HOME THEATER, TV] to "TV".

2 Point the remote control at the television

While pressing [⏻ POWER], enter the code with the numbered buttons.

e.g., 01: [0] ➡ [1]

Manufacturer and Code No.

Panasonic National QUASAR	01, 02	PHILIPS (RC-5)	03
		RCA	05
		SAMSUNG	14, 18, 19
FISHER	10	SANYO	10
GE	05	SHARP	06, 07
GOLDSTAR	15, 16, 17	SONY	08
HITACHI	12	SYLVANIA	03
JVC	11	THOMSON	05
LG	15, 16, 17	TOSHIBA	09
MAGNAVOX	03	ZENITH	04
MITSUBISHI	13		

Test by turning on the television and changing channels. Repeat the procedure until you find the code that allows correct operation.

- If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote control is not compatible with your television.

When other Panasonic products respond to this remote control

Change the remote control code on the main unit and the remote control (the two must match) if you place other Panasonic products close together. Use "1", the factory set code, under normal circumstances.

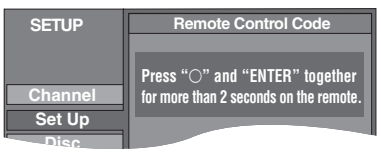
1 Press [FUNCTIONS].

2 Press [▲, ▼] to select "SETUP" and press [ENTER].

3 Press [▲, ▼] to select "Set Up" and press [▶].

4 Press [▲, ▼] to select "Remote Control Code" and press [ENTER].

5 Press [▲, ▼] to select the code (1, 2, or 3) and press [ENTER].



6 To change the code on the remote control

While pressing [ENTER], press and hold the numbered button ([1], [2] or [3]) for more than 2 seconds.

7 Press [ENTER].

■ When the following indicator appears on the unit's display

The unit's remote control code

Change the code on the remote control to match the main unit's (➡step 6).

To exit the screen
Press [RETURN] several times.
To return to the previous screen
Press [RETURN].

HDD and discs you can use for recording and play

Type	Logo	Indicated in these instructions	Instructions
Hard disk drive (HDD) ●80 GB	–	HDD	Temporary storage ●You can record up to 142 hours [in EP (8H) mode] (➡ page 13, Recording modes and approximate recording times). ●You can perform chasing playback or Time Slip (➡ page 13). ●You can record digital broadcasts that allow “One time only recording”. You can transfer (dub) a recorded title to a CPRM compatible DVD-RAM; however, the title is erased from the HDD. (➡ page 45).
DVD-RAM ●4.7 GB/9.4 GB, 12 cm (5″) ●2.8 GB, 8 cm (3″)	DVD RAM RAM4.7	RAM	Re-writable discs for backup use ●You can record up to 16 hours [in EP (8H) mode on double-sided disc. You cannot record or play continuously on two sides.] (➡ page 13, Recording modes and approximate recording times). ●You can perform chasing playback or Time Slip (➡ page 13). ●Scratch and dust resistant cartridge discs and large capacity double sided discs (9.4GB) are commercially available. ●You can record digital broadcasts that allow “One time only recording” when using CPRM (Content Protection for Recordable Media) compatible discs (➡ page 45). You cannot transfer (dub) a recorded title. ●This unit is compatible with 1×–3× recording speed discs. ●You can transfer (dub) up to 24 × recording speed by using a high speed recording compatible disc (➡ page 31).
DVD-R ●4.7 GB, 12 cm (5″) ●1.4 GB, 8 cm (3″)	DVD R R4.7	DVD-R	One time recording discs for backup use (recordable until the disc is full) ●You can record up to 8 hours [in EP (8H) mode]. ●By finalizing the disc, you can play it in a DVD player as DVD-Video (Play only) (➡ page 35, 45). ●You cannot record digital broadcasts that allow “One time only recording”. ●This unit is compatible with 1×–4× recording speed discs. ●You can transfer (dub) up to 32 × recording speed by using a high speed recording compatible disc (➡ page 31).

●We recommend using Panasonic discs. DVD-R from other manufacturers may not be recorded or played due to the condition of the recording.

■ Which should I use, DVD-RAM or DVD-R?

The following chart indicates the differences. Select based upon what you require.

(○:Possible, ×:Impossible)	DVD-RAM	DVD-R
Re-writable	○	×
Edit	○	※1
Play on other players	○※2	○※3
Recording both Main and SAP of MTS broadcast	○	×※4
Recording broadcasts that allow one copy	○※5	×
Recording 16:9 aspect picture	○	※6

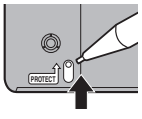
※1 You can erase, enter name and change thumbnail. Available space does not increase after erasing.
※2 Only on DVD-RAM compatible players.
※3 After finalizing the disc (➡ page 35, 45).
※4 Only one is recorded (➡ page 40, Select MTS).
※5 CPRM (➡ page 45) compatible discs only.
※6 The picture is recorded in 4:3 aspect.

Note

When “DVD-R High-Speed Recording” is set to “On” the restrictions on secondary audio recording, etc. are also applied to DVD-RAM. Turn this setting “Off” if high speed transfer (dubbing) to DVD-R is not necessary when recording a program (➡ page 40).

■ Protection RAM (Cartridge discs)

With the write-protect tab in the protect position, you cannot record to, edit, or erase from the disc.
Play automatically starts when inserted in the unit.



Play-only discs (12 cm/8 cm)

Disc type	Logo	Indicated in these instructions	Instructions
DVD-Audio	DVD AUDIO	DVD-A	High fidelity music discs
DVD-Video	DVD VIDEO DVD VIDEO	DVD-V	High quality movie and music discs
Video CD	COMPACT disc DIGITAL VIDEO	VCD	Recorded music and video (including CD-R/RW)
Audio CD	COMPACT disc DIGITAL AUDIO	CD	Recorded audio and music (including CD-R/RW)
	–		CD-R and CD-RW with music recorded in MP3 (➡ page 23)

●This unit plays CD-R/CD-RW (audio recording discs). Close the session or finalize the disc after recording.
Play may be impossible on some CD-R or CD-RW discs due to the condition of the recording.
●The producer of the material can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc’s instructions carefully.

Discs that cannot be played

●2.6 and 5.2 GB DVD-RAM, 12 cm (5″)
●3.95 and 4.7 GB DVD-R for Authoring
●Unfinalized DVD-R recorded on other equipment (➡ page 45, Finalize)
●PAL discs (you can still play the audio on DVD-Audio)
●DVD-Video with a region number other than “1” or “ALL”
●DVD-ROM, DVD-RW, +R, +RW, CD-ROM, CDV, CD-G, Photo CD, CVD, SVCD, SACD, MV-Disc, PD, Divx Video Disc, etc.

Continued on next page

Disc handling

■ How to hold a disc

Do not touch the recorded surface.

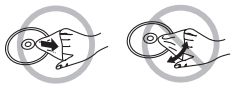
■ If there is dirt or condensation on the disc

RAM DVD-R

- Clean with an optional DVD-RAM/PD disc cleaner (LF-K200DCA1, where available).
- Do not use cleaners for CDs or cloths.

DVD-A DVD-V VCD CD

Wipe with a damp cloth and then wipe dry.



■ Handling precautions

- Do not attach labels or stickers to discs. (This may cause disc warping and un-balanced rotation, rendering it unusable.)
- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not use the following discs:
  - –Discs with exposed adhesive from removed stickers or labels (rented discs, etc).
  - –Discs that are badly warped or cracked.
  - –Irregularly shaped discs, such as heart shapes.

- Do not place in the following areas:
  - –In direct sunlight.
  - –In very dusty or humid areas.
  - –Near a heater.

HDD (Hard disk drive) handling care

The HDD is a high precision recording instrument and because of its long recording capability and high speed operation it is a very special device that is easily susceptible to damage.
As a basic rule, save important video content to a DVD disc as backup.

■ The HDD is a device that is not built to withstand vibration/shock or dust

Depending on the setup environment and handling of the HDD some content may become damaged and play and recording may no longer be possible. Especially during operation, do not subject the unit to any vibration, shock, or remove the AC power plug from the household AC outlet. In the event of a power failure the content, during recording or play, may be damaged.

■ The HDD is a temporary storage device

The HDD is not an everlasting storage device for recorded content. Use the HDD as a temporary storage place for viewing once, editing, or for saving to a DVD disc.

■ Immediately save (backup) all content as soon as you feel there may be problem with the HDD

If there is an irregularity within the HDD, strange sounds or problems with picture (block noise, etc.) may result. Using the HDD in this condition may worsen the problem and in the worst case the HDD may no longer become usable. As soon as you notice this type of problem, save all content to the DVD disc.
Recorded content (data) on an HDD that has become unusable is unrecoverable.

■ Setup precautions

- **Do not place in an enclosed area so the rear cooling fan and the cooling vents on the side are covered up.**
- **Place the unit on a surface that is flat and not subject to vibration or impact.**
- **Do not place on anything that generates heat like a video cassette recorder, etc.**

- Do not place in an area often subject to temperature changes.
- Place in an area where condensation does not occur. Condensation is a phenomenon where moisture forms on a cold surface when there is an extreme change in temperature. Condensation may cause internal damage to the unit.

- **Conditions where condensation may occur**
  - –When there is an extreme change in temperature (moving from a very hot location to a very cold location, or vice versa, or when subjected to an air conditioner or when cooled air directly impacts the unit.) When the HDD (warms during operation) is subjected to cold air, condensation may form on the inside of the HDD and may cause damage to the HDD heads, etc.
  - –When there is high humidity or a lot of steam in the room.
  - –During the rainy season.

- In the above situation, **without turning the unit on**, let the unit adjust to the room temperature and wait 2–3 hours until condensation is gone.

■ Cigarette smoke, etc. causes malfunction or breakdown

The unit may breakdown if cigarette smoke or bug spray/vapor, etc. gets inside the unit.

■ While operating

- Do not move the unit or subject to vibration or impact. (The HDD may become damaged.)
- Do not remove the AC power plug from the household AC outlet, or flip the power breaker switch.

While the unit is on, the HDD is rotating at high speed. Sound or movement due to rotation is normal.

■ When moving the unit

① Turn the unit off. (Wait until “BYE” disappears from the display.)
② Remove the AC power plug from the household AC outlet.
③ Move only after the unit has come to a complete stop (approx. 2 minutes) in order to avoid subjecting to vibration and shock. (Even after turning the unit off, the HDD continues operating for a short time.)

■ HDD recording time remaining

This unit records using a VBR (Variable bit rate) data compression system to vary recorded data segments to match video data segments which may cause differences in the displayed amount of time and space remaining for recording.
If the remaining amount of time is insufficient, erase any unwanted titles to create enough space before you start recording. (Erasing a play list will not increase the amount of time.)

■ When “HDD SLP (SLEEP)” appears in the display

The HDD has automatically gone into SLEEP mode in order to extend the life of the HDD.

- Press [HDD] to activate.
- While in SLEEP mode play or recording may not begin right away because the HDD takes time to be re-activated.
- If there is no disc in the unit, the HDD will go into SLEEP mode after there has been no operation for 30 minutes or longer. When not using the unit, we recommend removing the disc.

■ Indemnity concerning recorded content

Panasonic does not accept any responsibility for damages directly or indirectly due to any type of problems that result in loss of recording or edited content (data), and does not guarantee any content if recording or editing does not work properly. Likewise, the above also applies in a case where any type of repair is made to the unit (including any other non-HDD related component).

Maintenan

The precision parts in
environment, especia
Cigarette smoke als

To clean this unit,
- Never use alcoh
- Before using ch
  came with the

following points to ensure continued listening and
leasure.
nd dirt may adhere to the unit's lens over time, making it
ossible to record or play discs.
se the **DVD-RAM/PD lens cleaner (LF-K123LCA1, where available)** about once every year, depending on frequency of use and the operating environment. Read the lens cleaner's instructions carefully before use.

Listening caution

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion—and, most importantly, without affecting your sensitive hearing.

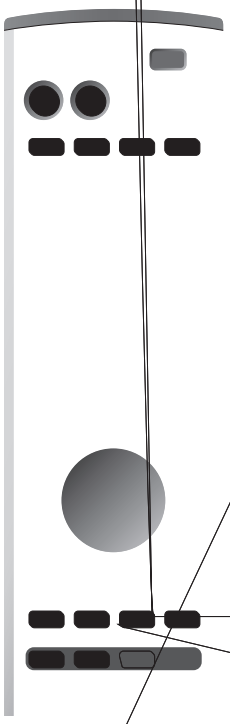
We recommend that you avoid prolonged exposure to excessive noise.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing.
Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.
To establish a safe level:
- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:
- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

User memo:



HDD RAM DVD-R

- It is not possible to record to both HDD (Hard Disk Drive) and DVD drive simultaneously.
- It is not possible to record continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.
- When using 8 cm (3″) DVD-RAM, remove the disc from the cartridge.
- You can record up to 500 titles on HDD, 99 titles (one side) on one disc.
- It is not possible to record CPRM (➡ page 45) protected material onto DVD-R or 2.8 GB DVD-RAM discs.

Regarding DVD-R

- When transferring (dubbing) a title recorded with the high speed mode to a DVD-R, set “DVD-R High-Speed Recording” to “On” before recording to the HDD. (➡ page 40)
- **In order to play a DVD-R recorded using this unit on another playback source, the disc must first be finalized (➡ page 35).**

Preparation

- Switch [HOME THEATER, TV] to “HOME THEATER”.
- Press [RETURN] to exit the television program list if it is displayed on the television. To turn off auto start up of the television program list ➡ page 19, Selecting the TV Guide On Screen™ system start up pattern.

1 Press [HDD] or [DVD] to select the recording drive.

The main unit: Press [INPUT SELECTOR] several times to select “HDD” or “DVD”.
The HDD or DVD indicator lights up on the unit.

2 If you selected the DVD drive

Press [▲ OPEN/CLOSE] on the main unit to open the tray and insert a disc.

- Press the button again to close the tray.
- If you put a disc in while the HDD is selected, the DVD indicator on the unit will flash while the unit reads the disc.

3 Press [∧ ∨ CH] to select the channel.

To select with the numbered buttons:

- Select the audio to record (➡ page 13).

4 Press [REC MODE] to select the recording mode (XP, SP, LP, or EP).

- To record sound using LPCM (XP mode only): Set “Audio for XP Recording” to “LPCM” in the SETUP menu. (➡ page 40)

5 Press [● REC] to start recording.

Recording will take place on open space on the HDD or on disc. Data will not be overwritten.

- You cannot change the channel or recording mode during recording.

- You can record while the unit is on standby for timer recording, but once the time for the timer recording to begin is reached, any recording taking place will stop and the timer recording will begin.

■ To stop recording

Press [■].

Recorded as 1 title until the position where stopped.

HDD

When continuously recording for long durations, titles are automatically divided every 8 hours.

DVD-R

It takes about 30 seconds for the unit to complete recording management information after recording finishes.

■ To pause recording

Press [❚❚].

Press again to restart recording.
(Title is not split into separate titles.)

■ To specify a time to stop recording—One Touch Recording

During recording

Press [● REC] to select the recording time.

Each time you press the button:

- This does not work during timer recordings (➡ page 15) or while using Flexible Recording (➡ page 14).

Off Timer

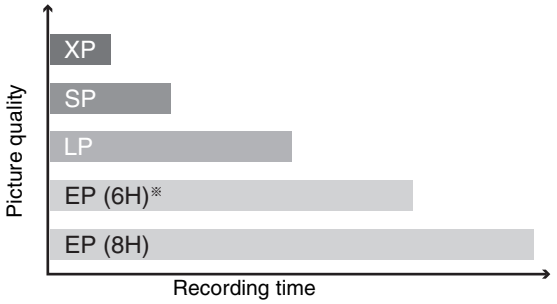
The unit switches to standby after about 6 hours in the stop mode. You can turn this feature off or change the time to 2 hours (➡ page 39, “Off Timer”).

Recording modes and approximate recording times

Depending on the content being recorded, the recording times may become shorter than indicated.

(Unit: hour)

Mode	HDD (80GB)	DVD-RAM		DVD-R (4.7 GB)
		Single-sided (4.7 GB)	Double-sided (9.4 GB)	
XP (High quality)	17	1	2	1
SP (Normal)	34	2	4	2
LP (Long play)	68	4	8	4
EP (Extra long play)	142 (106※)	8 (6※)	16 (12※)	8 (6※)



※ When "Recording Time in EP Mode" is set to "EP (6H)" in the SETUP menu.
The sound quality is better when using "EP (6H)" than when using "EP (8H)".

Note

When recording to DVD-RAM using EP (8H) mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use EP (6H) mode.

FR (Flexible Recording Mode)

The unit automatically selects a recording rate between XP and EP (8H) that will enable the recordings to fit in the remaining disc space with the best possible recording quality.

- You can set when transferring (dubbing) or programming timer recordings.
- When recording to the HDD, picture quality is automatically adjusted to precisely fit a transferred (dubbed) title on a 4.7 GB disc.
- All the recording modes from XP to EP appear in the display.

Selecting audio to record

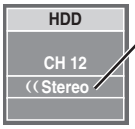
HDD RAM

Press [AUDIO].

Stereo: Main audio (stereo)
↓
- If the broadcast is "Mono+SAP", audio will be monaural even if you select Stereo mode.

SAP: Secondary audio program (SAP)
↓
- If recorded in SAP mode, main audio is also recorded.

Mono: Main audio (monaural)
- Select "Mono" if reception is poor during a stereo broadcast.



e.g., "Stereo" is selected
"((" appears when the unit is receiving the audio type you selected.

- If you change the sound setting while recording, the recorded sound will also change.

DVD-R
HDD RAM (When recording sound in LPCM)
HDD RAM (When "DVD-R High-Speed Recording" is set to "On")

Select the audio (Main or SAP) in "Select MTS" in the SETUP menu (➡ page 40).

Playing while you are recording

HDD RAM

Playing from the beginning of the title you are recording—Chasing playback

Press [►] (PLAY).

Time Slip indicator on the main unit lights.

Playing a title previously recorded while recording—Simultaneous rec and play

1 Press [DIRECT NAVIGATOR].

2 Press [▲, ▼, ◄, ►] to select a title and press [ENTER].

Time Slip indicator on the main unit lights.

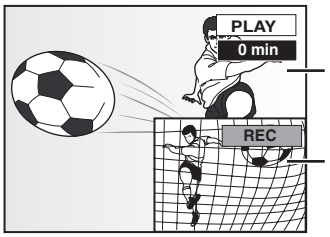
To exit the Direct Navigator screen

Press [DIRECT NAVIGATOR].

Reviewing the recorded images while recording—Time Slip

1 Press [TIME SLIP].

Time Slip indicator on the main unit lights.



Play starts from 30 seconds previous.

The image currently being recorded

- You will hear the playback audio.

2 Press [▲, ▼] to select the time and press [ENTER].

- Press [TIME SLIP] to show the play images in full. Press again to show the play and recording images.

■ To stop play

Press [■].

■ To stop recording

2 seconds after play stops
Press [■].

■ To stop timer recording

Press [■], then [ENTER] within 5 seconds.

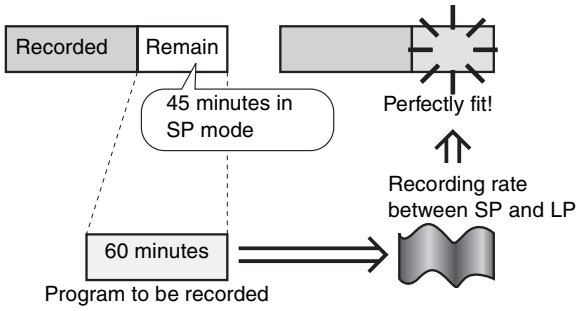
- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

Refer to the control reference on page 12.

Flexible Recording

HDD RAM DVD-R

The unit sets the best possible picture quality that fits the recording within the remaining disc space.
e.g.,

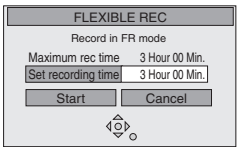


Preparation
- Select the channel to record.
- Press [HDD] or [DVD] to select the recording drive.

1 **While stopped**

Press [FUNCTIONS].

2 **Press [▲, ▼, ◄, ►] to select "FLEXIBLE RECORDING" and press [ENTER].**



3 **Press [◄, ►] to select "Hour" and "Min." and press [▲, ▼] to set the recording time.**
- You can also set the recording time with the numbered buttons.
- You cannot record more than 8 hours.

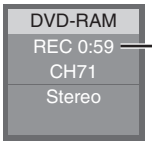
4 **When you want to start recording**

Press [▲, ▼, ◄, ►] to select "Start" and press [ENTER].
- Recording starts.
- The recording mode becomes FR mode.

To exit the screen without recording
Press [RETURN].

To stop recording partway
Press [■].

To show the remaining time
Press [STATUS].



Remaining time

Recording from a video cassette recorder

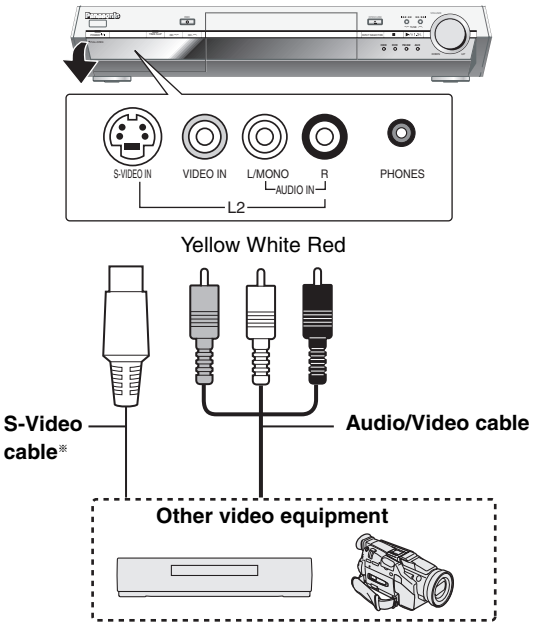
HDD RAM DVD-R

Preparation
- Connect a video cassette recorder to this unit's input terminals.
- Press [HDD] or [DVD] to select the recording drive.

Note

When recording using this unit's input terminals, only the sound received at the time of recording will be recorded.
As long as secondary audio that is recorded on the video cassette is not output on the unit in play, it is not recorded.

e.g.: Connecting to the L2 input terminals



If the audio output of the other equipment is monaural, connect to L/MONO.
※ The S-VIDEO terminal achieves a more vivid picture than the VIDEO terminal.

1 **While stopped**

Press [HDD/DVD INPUT] to select the input channel for the equipment you have connected.

e.g., If you have connected to L2 input terminals, select "L2".

2 **Press [REC MODE] to select the recording mode (XP, SP, LP or EP).**
- Using Flexible Recording (➡ left), you can save content of a video cassette to 1 disc with the best possible quality of recording without wasting disc space.

3 **Start play on the other equipment.**

4 **Press [● REC].**

Recording starts.

To skip unwanted parts
Press [❚❚] to pause recording. (Press again to restart recording.)

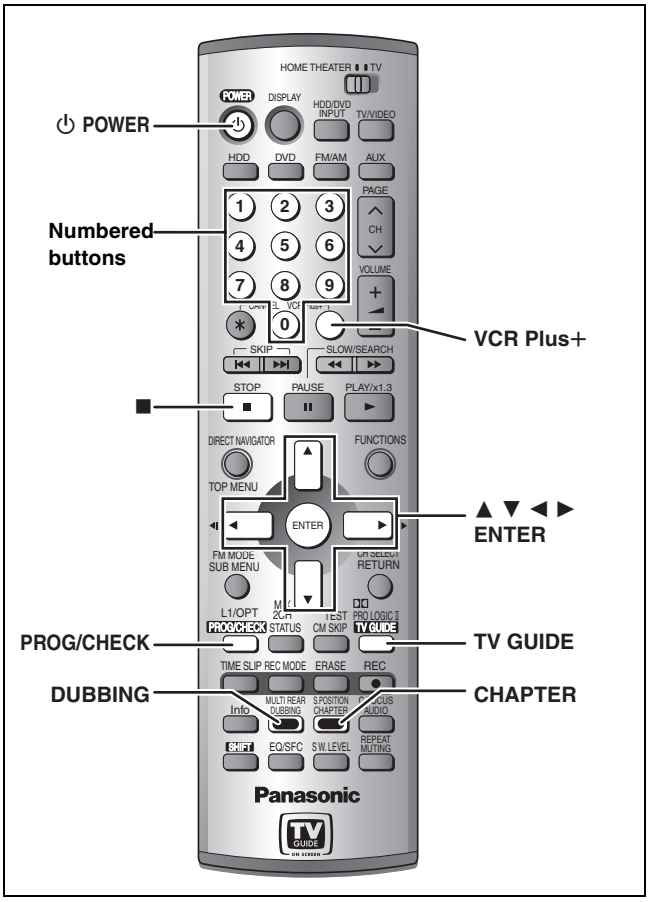
To stop recording
Press [■].

Almost all videos and DVD software on sale have been treated to prevent illegal copying. Any software that has been so treated cannot be recorded using this unit.

Timer recording

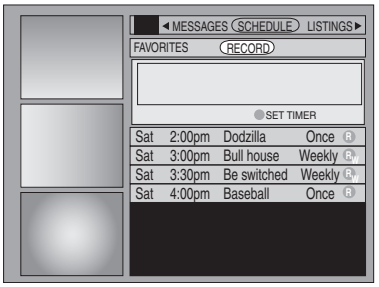
HDD RAM DVD-R

You can perform timer recording easily by just marking the desired

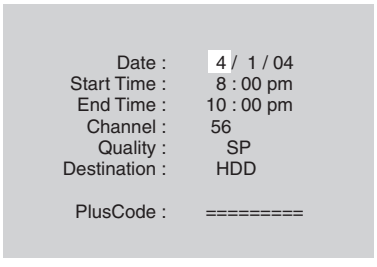


Manually programming timer recordings

1 Press [PROG/CHECK].



2 Press [CHAPTER] (Green).



3 Enter the settings.

●To enter the date
Press [▲, ▼] to select “Date” and press the numbered buttons.
(Date: Month/Day/Year)

●To enter the time
Press [▲, ▼] to select “Start Time” or “End Time” and press the numbered buttons.
–You can set up to 8 hours.
–To change am/pm
Press [◄, ►] to select “am” or “pm” and press [DUBBING] (Blue).

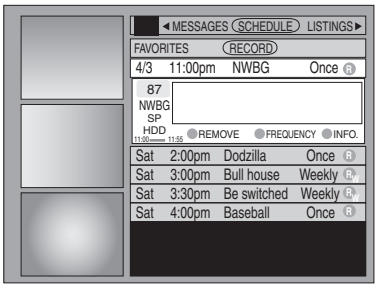
●To enter the channel
Press [▲, ▼] to select “Channel” and press the numbered buttons.
–To select the input channel (L1/L2/L3)
Press [DUBBING] (Blue).

●To change the recording mode
Press [▲, ▼] to select “Quality” and press [DUBBING] (Blue).
Each time you press the button:
LP → EP → FR → XP → SP

●To change the recording drive
Press [▲, ▼] to select “Destination” and press [DUBBING] (Blue).
Each time you press the button:
HDD ↔ DVD

When the recording drive is “DVD” and there is not enough remaining space, recording automatically switches to the “HDD” (➡ right, Relief Recording).

4 Press [ENTER].



●Press [CHAPTER] (Green) to change recording frequency.
Each time you press the button:

Records only once.

Records weekly.

Records daily (From Monday to Friday).

Temporarily cancels the program timer recording without deleting the program setting.

●To program other recordings
Press [▲, ▼, ◄, ►] to select “RECORD” and repeat steps 2–4.

5 Press [TV GUIDE].

Returns to the television screen.
●The unit is not off. To save power, turn the unit off by pressing [⏻ POWER].
●When using the cable TV box, make sure the cable TV box is turned on.

Notes on timer recording ➡ page 17

■ To cancel recording when recording has already begun

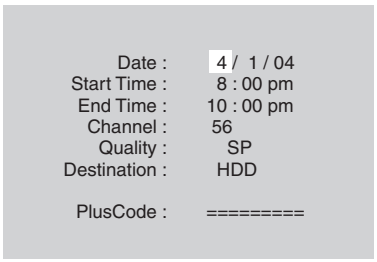
Press [■], then [ENTER] within 5 seconds.
●You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

Using VCR Plus+ system to make timer recordings

Entering PlusCode® number is an easy way of timer recording. You can find them in TV listings in newspapers and magazines.

- You can enter up to 8 days in advance.
- VCR Plus+ system works only after this unit downloads the television program list (➡ page 6).

1 Press [VCR Plus+].

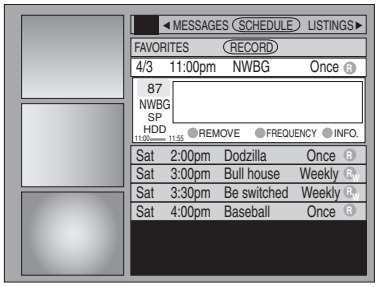


2 Press [▲, ▼] to select "PlusCode".

3 Press the numbered buttons to enter the PlusCode number.

- **To correct the number**
  Press [▲] and press [▼]. Enter the number again from the beginning.

4 Press [ENTER].



Repeat steps 1–4 to program other recordings.

- As long as the setting is not changed, the program is recorded to the HDD in the recording mode selected by the unit. To change the setting ➡ page 15, To change the setting, steps ③–④.

5 Press [TV GUIDE].

Returns to the television screen.

- The unit is not off. To save power, turn the unit off by pressing [⏻ POWER].
- When using the cable TV box, make sure the cable TV box is turned on.

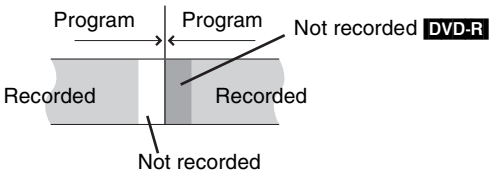
■ To cancel recording when recording has already begun

Press [■], then [ENTER] within 5 seconds.

- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

Notes on timer recording

- "④" lights on the unit's display to indicate that the unit is in timer recording standby.
- "④" flashes when the unit cannot go to timer recording standby.
- Timer recordings are activated regardless of whether the unit is turned on/off.
- Timer recordings begin when the set time is reached even when recording or when playing.
- Timer recordings do not begin while transferring (dubbing) in normal speed mode (➡ page 31).
- When you program successive timer recordings to start immediately one after the other, the unit cannot record the part at the ending of the earlier program (approximately 15 seconds). In addition, when recording to DVD-R, the unit cannot record the part at the beginning of the later program (approximately 15 seconds).



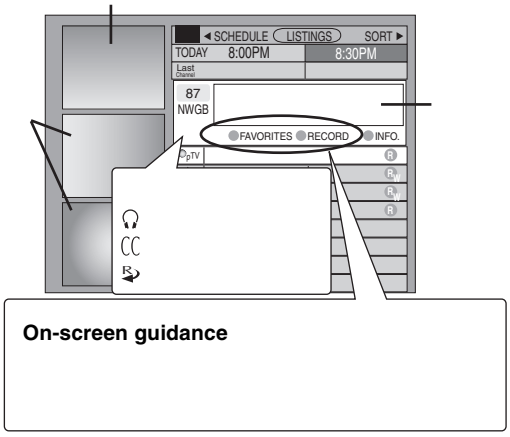
- If you set DST (Daylight Saving Time) to ON when manually setting the clock (➡ page 7), timer recording may not work when summer switches to winter and vice versa.

■ Relief Recording

When the recording drive is set to **"DVD"** for timer recording and if the program will not fit onto the disc, the recording drive will be changed to the **"HDD"** automatically.

- If there is no disc in the tray or the disc cannot be recorded on or when timer recording starts while transferring (dubbing), the recording drive will be changed to the HDD.
- The Direct Navigator shows which programs were relief-recorded ("↱" is displayed.)(➡ page 20).
- If the time remaining on the HDD is insufficient, as much of the program as possible will be recorded onto the HDD.

Press [TV GUIDE].



On-screen guidance

Programs are categorized by color.

Green: Sports Blue: Children's
Purple: Movies Teal: Other categories

■ Selecting the program from the desired program category and setting timer recording

1 Press [▲] several times to select "LISTINGS".
2 Press [◄, ►] to select "SORT" and press [▼].
3 Press [◄, ►] to select the major category and press [▼].
4 Press [▲, ▼, ◄, ►] to select the minor category and press [ENTER].
5 Press [▲, ▼, ◄, ►] to select.
- ●When sorting alphabetically, press [ENTER] and [▲, ▼] to select.

6 Press [CHAPTER] (Green).

■ Changing the size of information window

Press [Info] while the program is highlighted.

■ Adjusting the channel line-up

If the television program list's channel line-up differs from what you were expecting, perform the following steps.

1 Press [▲] several times to select "LISTINGS".
2 Press [◄, ►] to select "SETUP" and press [▼].
3 Press [▲, ▼] to select "Change system settings" and press [ENTER].
4 Press [▲, ▼] to select "Yes, but my channel line-up is incorrect" and press [ENTER].

- ●When there is more than one cable network transmitting television program listings in the area where you are living, more than one channel line-up is displayed. Press [▲, ▼] to select one and then press [ENTER].
- ●Alternatively, you can customize the channel line-up in the Channel Editor (➡ right, Customizing the channel line-up). Press [▲, ▼] to select "No Match" and then press [ENTER].

■ Selecting the TV Guide On Screen™ system start up pattern

1 Press [▲] several times to select "LISTINGS".
2 Press [◄, ►] to select "SETUP" and press [▼].
3 Press [▲, ▼] to select "Review options" and press [ENTER].
4 Press [▲, ▼] to select the option and press [ENTER].
- ●On: Turns on auto start up.
- ●Off: Turns off auto start up.

■ Reading messages

You may receive messages regarding new TV Guide On Screen™ system functions or special promotions. When there are unread messages, an envelope-shaped icon appears at the upper left of the screen.

1 Press [▲] several times to select "LISTINGS".
2 Press [◄, ►] to select "MESSAGES" and press [▼].
3 Press [▲, ▼] to select the message and press [ENTER].
- ●To delete unwanted messages press [CHAPTER] (Green).
- ●Messages are automatically deleted after 60 days.
- ●The ID number appears at the end of the list.

■ Customizing the channel line-up

1 Press [▲] several times to select "LISTINGS".
2 Press [◄, ►] to select "SETUP" and press [▼].
3 Press [▲, ▼] to select "Change channel display" and press [ENTER].
4 Press [▲, ▼] to select the channel.
- ●Press [PAGE ∨ CH ∧] to skip one screen.

To hide the channel

Press [CHAPTER] (Green) to select "OFF".

To change the channel number

Press the numbered buttons.

e.g. 1: [0] ➡ [0] ➡ [1]
15: [0] ➡ [1] ➡ [5]
115: [1] ➡ [1] ➡ [5]

To change the order of the channels

① Press [◄].
② Press [DUBBING] (Blue) to move up or [CHAPTER] (Green) to move down.

Repeat step 4 as necessary.

5 Press [TV GUIDE].

■ Registering a program you don't want to miss as a "Favorite"

By registering a program as "Favorite" in advance, you can later tune to that program quickly by pressing [DUBBING] (Blue) when that program begins broadcasting.
When you cannot remember the television program you want to watch, we recommend you press [DUBBING] (Blue) when the television reception screen is displayed. This unit may tune in your "Favorite" program.

1 Press [TV GUIDE].
2 Press [▲, ▼, ◄, ►] to select the program.
3 Press [DUBBING] (Blue).

" " appears in the list to indicate that the program is set as a "Favorite".

- ●Press [CHAPTER] (Green) to change the frequency. Each time you press the button:
- ●Press [DUBBING] (Blue) to cancel.

Repeat steps 1–3 to set other programs.

- ●When there is more than one program registered as "Favorite" in the same time frame, each time you press [DUBBING] (Blue), the program switches to the other.

■ Viewing TV Guide On Screen™ system explanations and promotions

1 Press [▲] several times to select "LISTINGS".
2 Press [◄, ►] to select "PROMOTIONS" and press [▼].
3 Press [▲, ▼] to select and press [ENTER].

RECORDING

Operations during play

Stop

Press [■].

The stopped position is memorized.

"PLAY" flashes in the unit's display. (Excluding when playing from the Direct Navigator and when playing a play list.)

Resume play function

Press [▶] (PLAY) to restart from this position.

Pause

Press [❚❚].

Press again to restart play.

Search

Press [◀◀] or [▶▶].

- On the main unit, press and hold [❙◀◀/◀◀] or [▶▶/▶▶❙].
- The speed increases up to 5 steps.
- Press [▶] (PLAY) to restart play.
- Audio is heard during first level search forward.
  You can turn off the sound during search (➡ page 40, "Search Audio & PLAY ×1.3").
  Audio is heard during all levels of search. DVD-A (excluding moving picture parts) CD

Skip

Press [❙◀◀] or [▶▶❙].

- On the main unit, press [❙◀◀/◀◀] or [▶▶/▶▶❙].
- Each press increases the number of skips.

Starting from a selected item

Press the numbered buttons.

e.g., 5: [0] ➡ [5] HDD CD (MP3 discs only) 5: [0] ➡ [0] ➡ [5]
15: [1] ➡ [5] 15: [0] ➡ [1] ➡ [5]

DVD-A Selecting groups
While stopped (screen saver is displayed on the television ➡ right)
5: [5]

- This works only when stopped (screen saver is displayed on the television ➡ right) with some discs.

Quick View

HDD RAM

The play speed can be increased without distorting the audio.

Press and hold [▶] (PLAY/×1.3).

- Press again to return to normal speed.
- This does not work if the setting is "Off" in "Search Audio & PLAY ×1.3" (➡ page 40).

Slow-motion

HDD RAM DVD-R DVD-A (Motion picture parts only) DVD-V VCD

While paused, press [◀◀] or [▶▶].

- On the main unit, press and hold [❙◀◀/◀◀] or [▶▶/▶▶❙].
- The speed increases up to 5 steps.
- Press [▶] (PLAY) to restart play.
- Forward direction only. VCD
- The unit will pause if slow-motion play is continued for 5 minutes.

Frame-by-frame

HDD RAM DVD-R DVD-A (Motion picture parts only) DVD-V VCD

While paused, press [◀❚❚] or [❚❚▶].

- Each press shows the next frame.
- Press [▶] (PLAY) to restart play.
- Forward direction only. VCD

Repeat play

This function works only when the elapsed play time is displayed.

Press [SHIFT]+[REPEAT] several times to select an item to be repeated.

- All VCD CD (excluding MP3 discs)
- Chapter HDD RAM DVD-R DVD-V
- Group DVD-A CD (MP3 discs only)
- PL (Play list) HDD RAM
- Title HDD RAM DVD-R DVD-V
- Track DVD-A VCD CD

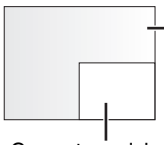
Select "OFF" to cancel.

Displaying the television image as a picture-in-picture

Press [TIME SLIP].

The unit displays the television image as a picture-in-picture.

- You will hear the playback audio.
- Press [TIME SLIP] again to cancel.
- The blue background does not appear on the receiving screen even if you select "On" from the "Blue Background" in the SETUP menu (➡ page 41).



Current receiving images

- You can change the channel being received by pressing [∧ ∨ CH].
- You cannot change the channel being received while recording.

Skipping the specified time (Time Slip)

HDD RAM DVD-R

1 Press [TIME SLIP].

2 Press [▲, ▼] to select the time and press [ENTER].

Play skips the specified time.

- Press [TIME SLIP] to show the play images in full.

CM Skip

HDD RAM DVD-R

Play restarts from approximately a minute later.

Press [CM SKIP].

PLAYING

Refer to the control reference on page 20.

Editing operations during play

Erase HDD RAM DVD-R	**1 Press [ERASE].** **2 Press [◄, ►] to select "Erase" and press [ENTER].** ●A title cannot be restored once it is erased. Make certain before proceeding. ●You cannot erase while recording or transferring (dubbing).
Create chapters HDD RAM	**Press [CHAPTER].** ●Press [|◄◄ , ►►|] to skip to the start of a chapter. ●You cannot divide while recording or transferring (dubbing).

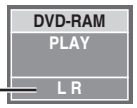
Changing audio during play

Press [AUDIO].

HDD RAM VCD

LR→L→R

e.g., "L R" is selected



●When playing an SAP broadcast recorded on DVD-RAM:
MAIN←→SAP

DVD-A DVD-V

You can change the audio channel number each time you press the button. This allows you to change things like the soundtrack language (➡ page 24, Sound track).

e.g., English is selected.

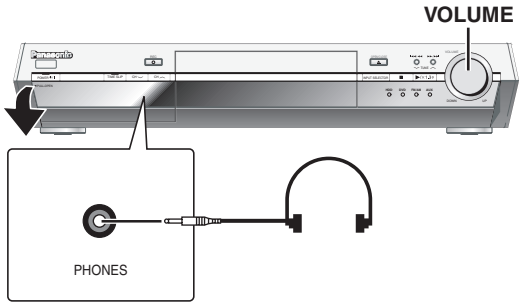
Note

You cannot change the audio type in the following cases.
●When a DVD-R disc is in the disc tray while DVD drive is selected.
●When the recording mode is XP and "Audio for XP Recording" is set to "LPCM" (➡ page 40).
●When "DVD-R High-Speed Recording" is set to "On" (➡ page 40).

Using headphones

1 Reduce the volume and connect the headphones (not included).

Headphone plug type: 3.5 mm (1/8″) stereo

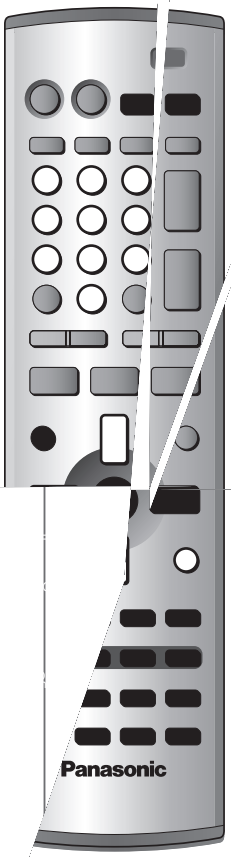


2 Adjust headphone volume with [VOLUME DOWN, UP].

●Audio is automatically switched to stereo (2-channel).

Note

Avoid listening for prolonged periods of time to prevent hearing damage.



s recorded on CD-R/RW designed for audio
ized (➡ page 45) on a computer. Files are
folders are treated as groups.

TOP MENU].

While the file list is displayed

1 Press [►] while a track is highlighted to display the tree screen.

2 Press [▲, ▼, ◄, ►] to select a group and press [ENTER].

The file list for the group appears.

To return to the file list

Press [RETURN].

Press [▲, ▼] to select the track and press [ENTER].

Play continues to the last track in the last group.

- "☞" indicates the track currently playing.
- You can also select the track with the numbered buttons.

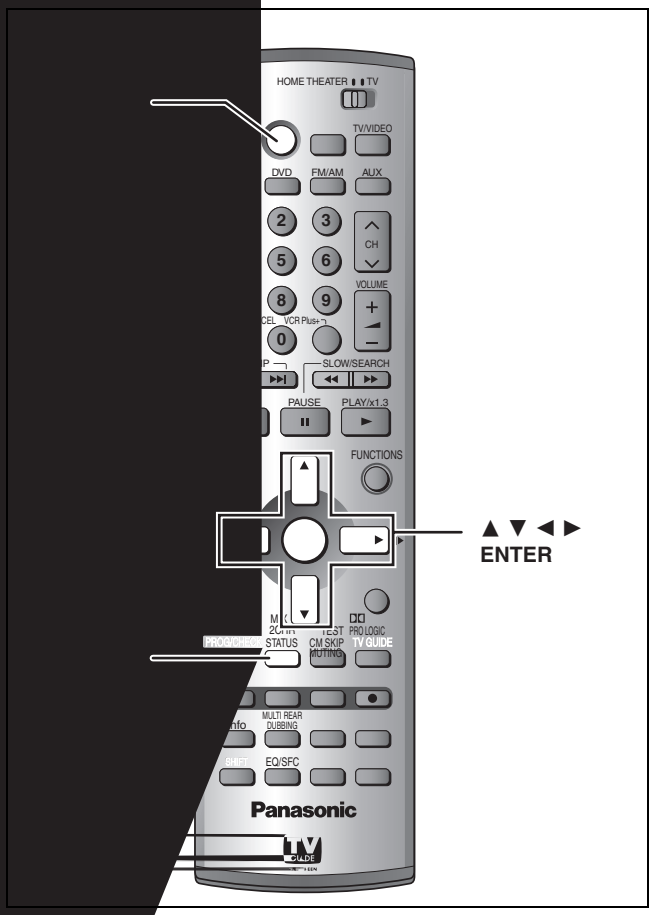
e.g., 5: [0] ➡ [0] ➡ [5]
15: [0] ➡ [1] ➡ [5]

To show other pages

Press [▲, ▼, ◄, ►] to select "Prev." or "Next" and press [ENTER]. After listing all the tracks in one group, the list for the next group appears.

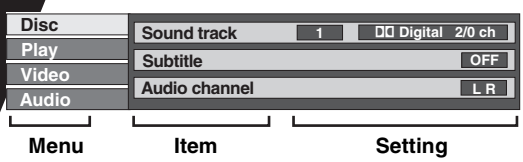
To exit the screen

Press [TOP MENU].



een menus

ss [DISPLAY].



- Depending on the condition of the unit (playing, stopped, etc.) and disc contents, there are some items that you cannot select or change.

2 Press [▲, ▼] to select the menu and press [►].

3 Press [▲, ▼] to select the item and press [►].

4 Press [▲, ▼] to select the setting.

- Some items can be changed by pressing [ENTER].

To clear the on-screen menus
Press [DISPLAY].

Disc menu–Setting the disc content

Sound track※

HDD RAM DVD-R
The disc's audio attributes appear.
DVD-A DVD-V
Select the audio and language (➡ below, Audio attribute, Language).

Subtitle※
HDD RAM DVD-R (Only discs that contain subtitle on/off information)
DVD-A DVD-V

Turn the subtitle on/off and select the language (➡ below, Language).
- Subtitle on/off information cannot be recorded using this unit. HDD RAM DVD-R
- If the subtitles overlap closed captions recorded on discs, turn the subtitles off.

Audio channel HDD RAM VCD

➡ page 22, Changing audio during play

Angle※ DVD-A DVD-V

STILL-P (Still picture) DVD-A

Selects the play method for still pictures.
Slide Show: Plays according to the default order on the disc.
Page: Select the still picture number and play.
- RANDOM: Plays in random order.
- Return: Returns to the default still picture on the disc.

PBC (Playback control ➡ page 45) VCD

Indicates whether menu play (playback control) is on or off.

※ You may have to use the menus (➡ page 20) on the disc to make changes.
- The display changes according to the disc content. You cannot change when there is no recording.

Audio attribute

LPCM/PPCM/DDigital/DTS/MPEG:	Signal type
k (kHz):	Sampling frequency
b (bit):	Number of bits
ch (channel):	Number of channels

Language

ENG: English	SVE: Swedish	CHI: Chinese
FRA: French	NOR: Norwegian	KOR: Korean
DEU: German	DAN: Danish	MAL: Malay
ITA: Italian	POR: Portuguese	VIE: Vietnamese
ESP: Spanish	RUS: Russian	THA: Thai
NLD: Dutch	JPN: Japanese	∗: Others

Play menu–Change the play sequence

Repeat play
Refer to page 21, Repeat play.

Video menu–Change the picture quality

Picture

- **Normal:** Default setting
- **Soft:** Soft picture with fewer video artifacts
- **Fine:** Details are sharper
- **Cinema:** Mellows movies, enhances detail in dark scenes.
- **User:** You can make further adjustments.

Contrast
Increases the contrast between light and dark parts of the picture.
Brightness
Brightens the picture.
Sharpness
Adjust the sharpness of the edges of the horizontal lines.
Color
Adjusts the shade of the picture's color.
Gamma
Increases the brightness of the center ranges to improve detail and contrast in dark scenes.
3D NR
Reduces overall noise.
Integrated DNR
Reduces mosaic noise and character smudging.

MPEG-DNR (When any item other than "User" is selected)

You can turn the recommended settings for 3D NR and Integrated DNR on and off.

Progressive※ (➡ **page 45**)

Select "ON" to enable progressive output.
- Select "OFF" if the picture is stretched horizontally.
- When progressive output is on, closed captions cannot be displayed.

Transfer※ [When "Progressive" (➡ above) is set to "ON".]

Select the method of conversion for progressive output to suit the type of material being played (➡ page 45, Film and video).
- **Auto1 (normal):** Detects 24 frame-per-second film content and appropriately converts it.
- **Auto2:** Compatible with 30 frame-per-second film content in addition to 24 frame-per-second film content. (Picture distortion may occur depending on the content)
- **Video:** Select when using "Auto1" and "Auto2", and the video content is distorted.

※ Only when you have selected "480P" in "TV Type" (➡ page 8).

Audio menu–Change the sound effect

Dialog Enhancer DVD-A DVD-V
(Dolby Digital, 3-channel or over only, including a center channel)

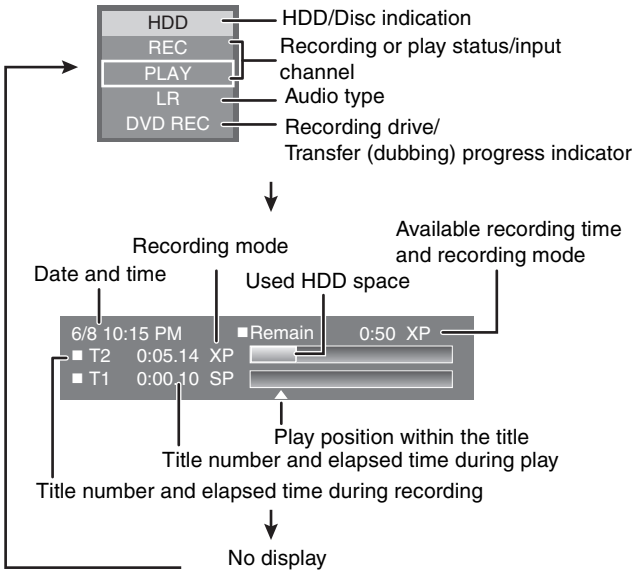
The volume of the center channel is raised to make dialog easier to hear.

Status messages

Status messages appear on the television during operation to show the condition of the unit.

Press [STATUS].

The display changes each time you press the button.
- Displayed information are examples.



PLAYING

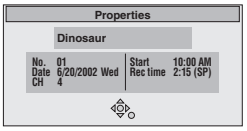
Title operations

Erase※
HDD RAM DVD-R

Press [◄, ►] to select “Erase” and press [ENTER].
- **Once erased, the recorded contents are lost and cannot be restored.** Make certain before proceeding.
- The available recording time on DVD-R does not increase when you erase titles.

Properties
HDD RAM DVD-R

Information (e.g., time and date) is shown.



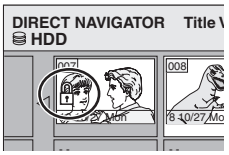
Enter Name
HDD RAM DVD-R

➡ page 30, Entering text

Set up Protection※
Cancel Protection※
HDD RAM

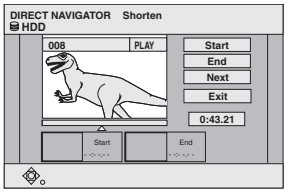
If set, this will protect the title from accidental erasure.

Press [◄, ►] to select “Yes” and press [ENTER].
The lock symbol appears when the title is protected.



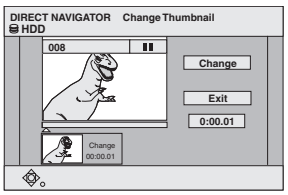
Shorten
HDD RAM

You can remove unnecessary parts of the recording such as commercials.
1. **Press [ENTER] at the start point and end point of the section you want to erase.**
2. **Press [▲, ▼] to select “Exit” and press [ENTER].**
   - Select “Next” and press [ENTER] to erase other sections.
3. **Press [◄, ►] to select “Erase” and press [ENTER].**



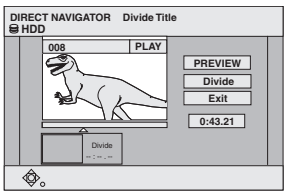
Change Thumbnail
HDD RAM DVD-R

You can change the image to be shown as the thumbnail picture in the Title View.
1. **Press [►] (PLAY) to start play.**
2. **Press [ENTER] when the image you want to use as a thumbnail is shown.**
3. **Press [▲, ▼] to select “Exit” and press [ENTER].**



Divide Title
HDD RAM

You can divide a title into two.
1. **Press [ENTER] at the point you want to divide the title.**
2. **Press [▲, ▼] to select “Exit” and press [ENTER].**
3. **Press [◄, ►] to select “Divide” and press [ENTER].**



To confirm the division point
Press [▲, ▼] to select “Preview” and press [ENTER]. (The unit plays 10 seconds before and after the division point.)
To change the division point
Restart play and press [▲, ▼] to select “Divide”, then press [ENTER] at the point you want to change.

Note
- The divided titles retain the name and CPRM property (➡ page 45) of the original title.
- Video and audio just before and after the dividing point may momentarily cut out.

※ Multiple editing is possible.

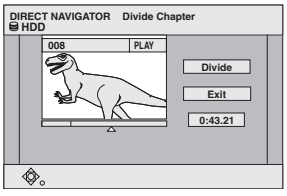
Chapter operations

Erase Chapter※
HDD RAM

Press [◄, ►] to select “Erase” and press [ENTER].
- **Once erased, the recorded contents are lost and cannot be restored.** Make certain before proceeding.

Divide Chapter
HDD RAM

1. **Press [ENTER] at the point you want to divide.**
   - Repeat this step to divide at other points.
2. **Press [▲, ▼] to select “Exit” and press [ENTER].**

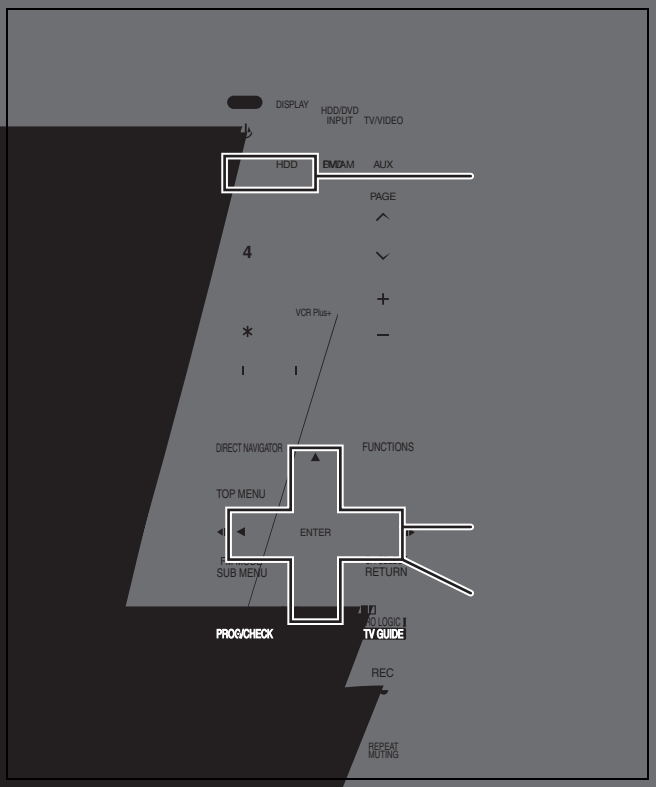


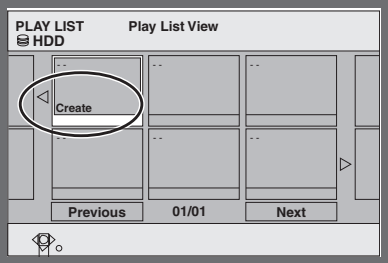
Combine Chapters
HDD RAM

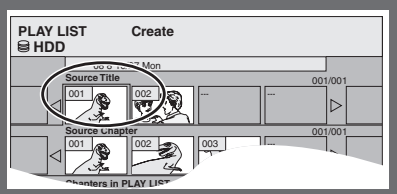
Press [◄, ►] to select “Combine” and press [ENTER].
- The selected chapter and next chapter are combined.

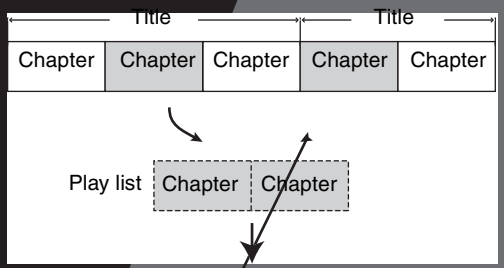
※ Multiple editing is possible.

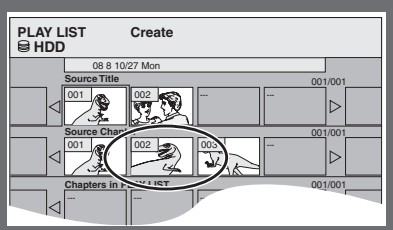
For quicker editing
- Use search, Time Slip or slow-motion (➡ page 21) to find the desired point.
- Press [I◄◄, ►►I] to skip to the end of a title.

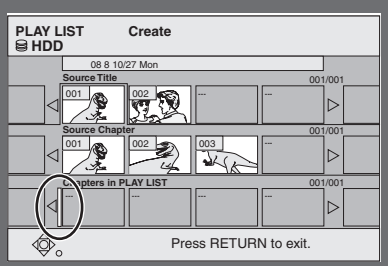

DISPLAY
HDD/DVD INPUT
TV/VIDEO
HDD
AUX
PAGE
4
VCR Plus+
DIRECT NAVIGATOR
FUNCTIONS
TOP MENU
ENTER
SUB MENU
RETURN
PROG/CHECK
TV GUIDE
REC
REPEAT MUTING


PLAY LIST
HDD
Play List View
Create
Previous
01/01
Next


PLAY LIST
HDD
Create
Source Title
001/001
Source Chapter
001/001
Chapters in PLAY LIST


Title
Title
Chapter
Chapter
Chapter
Chapter
Chapter
Play list
Chapter
Chapter


PLAY LIST
HDD
Create
08 8 10/27 Mon
Source Title
001/001
Source Chapter
001/001
Chapters in PLAY LIST
001/001


PLAY LIST
HDD
Create
08 8 10/27 Mon
Source Title
001/001
Source Chapter
001/001
Chapters in PLAY LIST
001/001
Press RETURN to exit.

HDD
DVD
DISC SPACE LEFT 52:00 SP
HDD
Play back
Record
Dubbing / Edit
Set up
DIRECT NAVIGATOR
TIMER RECORDING
TV GUIDE
FLEXIBLE RECORDING
PLAY LIST
DISC SETTING

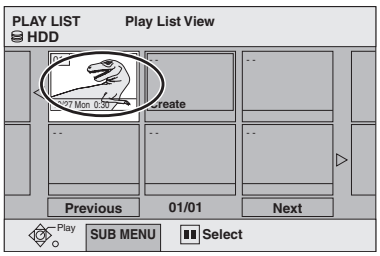
Editing and playing play lists/chapters

1 Press [FUNCTIONS].

2 Press [▲, ▼, ◄, ►] to select "PLAY LIST" and press [ENTER].

3 Press [▲, ▼, ◄, ►] to select the play list.

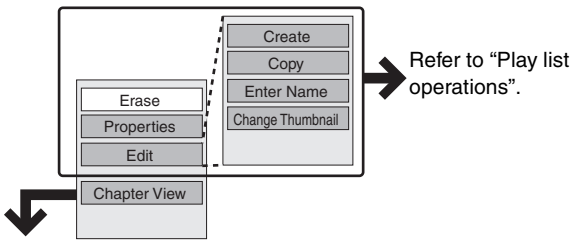
To start play ➡ Press [ENTER].
To edit ➡ Step 4.



●**To show other pages/Multiple editing (➡ page 26)**

4 Press [SUB MENU], then [▲, ▼] to select the operation and press [ENTER].

●If you select "Edit", press [▲, ▼] to select the operation and press [ENTER].

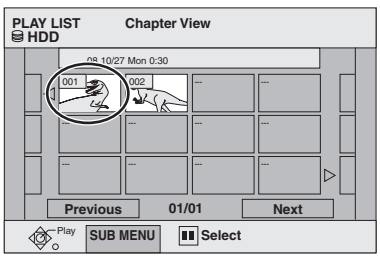


Refer to "Play list operations".

If you select "Chapter View"

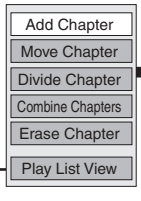
5 Press [▲, ▼, ◄, ►] to select the chapter.

To start play ➡ Press [ENTER].
To edit ➡ Step 6.



●**To show other pages/Multiple editing (➡ page 26)**

6 Press [SUB MENU], then [▲, ▼] to select the operation and press [ENTER].



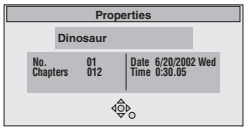
Refer to "Chapter operations".

●You can go back to the Play List View.

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].

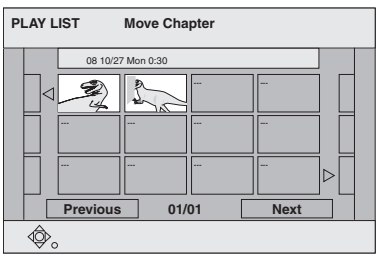
Play list operations

Erase※	**Press [◄, ►] to select "Erase" and press [ENTER].**
Properties	Play list information (e.g., time and date) is shown. 
Create	➡ page 28, Creating play lists
Copy※	**Press [◄, ►] to select "Copy" and press [ENTER].**
Enter Name	➡ page 30, Entering text
Change Thumb-nail	➡ page 27, Change Thumbnail

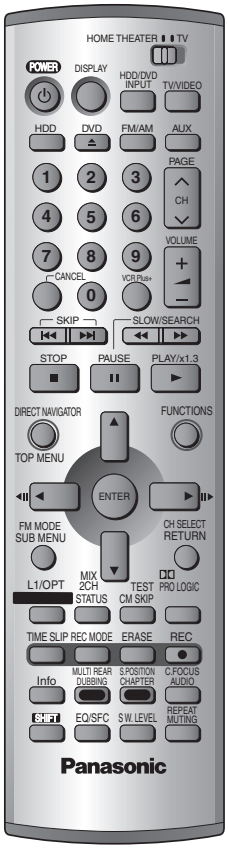
※ Multiple editing is possible.

Chapter operations

Editing chapters in a play list does not modify the source titles and source chapters.

Add Chapter	➡ page 28, Creating play lists, Step 4–6
Move Chapter	**Press [▲, ▼, ◄, ►] to select the position to insert the chapter and press [ENTER].** 
Divide Chapter	➡ page 27, Divide Chapter
Combine Chapters	➡ page 27, Combine Chapters
Erase Chapter※	➡ page 27, Erase Chapter

※ Multiple editing is possible.



HDD **RAM** **DVD-R**

You can give names to recorded titles, etc.

The maximum number of characters:

HDD **RAM**	Characters
Title	64
Play list	64
Disc	64

DVD-R	Characters
Title	44
Disc	40

If a name is long, parts of it may not be shown on some screens.

1 Show Enter Name screen.

2 Press [▲, ▼, ◄, ►] to select a character and press [ENTER].

Repeat this step to enter other characters.

- **To erase a character**
  Press [▲, ▼, ◄, ►] to select the character in the name field and press [❚❚].

- **Using the numbered buttons to enter characters**
  e.g., entering the letter “R”
  ①**Press [7] to move to the 7th row.**
  ②**Press [7] twice to highlight “R”.**
  ③**Press [ENTER].**

- **To enter a space**
  Press [✳ CANCEL] and press [ENTER].

3 Press [■] (SET).

Returns to the previously displayed screen.

To end partway
Press [RETURN].
Text is not saved.

Note
If you enter a long name, only part of it is shown in the TOP MENU after finalization (➡ page 35). When entering a title name, the name that will appear in the TOP MENU can be previewed in “Display in DVD-R TOP MENU” window.

Transferring (dubbing) titles or play lists

HDD RAM DVD-R

You can select from a variety of methods to transfer (dub) on this unit.

■ Transferring (dubbing) direction

You can transfer (dub) your favorite titles and play lists to an archive disc. ●Transferring (dubbing) a play list will create a title.		When you want to re-edit finalized content on a DVD-R, etc.
High speed mode HDD ⟷ RAM Normal speed mode	High speed mode※ HDD → DVD-R Normal speed mode ●When you want to play a transferred (dubbed) disc on other equipment, you must finalize the disc after transferring (dubbing) (➡ page 35, 45). ※Before recording to HDD, set "DVD-R High-Speed Recording" to "On" (➡ page 40).	HDD ← DVD-V※ Normal speed mode ※Finalized DVD-R or DVD-Video on sale that is not copy-protected, etc.

Normal speed mode: Select XP, SP, LP, EP or FR as the recording mode for transferring (dubbing) (➡ page 13).

■ Transferring (dubbing) mode

Transferring (dubbing) a title or a play list

⇩

One Touch Transfer (dubbing) (➡ page 32)

Transferring (dubbing) multiple titles and play lists together

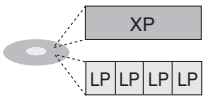
⇩

Transferring (dubbing) using the transferring (dubbing) list (➡ page 32)

⇩

You can select transferring (dubbing) speed mode and picture quality (➡below)

■ Transferring (dubbing) speed mode types and features

	High speed	Normal speed (XP, SP, LP, EP, FR)
Features	You can transfer (dub) in a very short amount of time. You can transfer (dub) even faster if you use a high speed recording compatible disc. You can record and play using the HDD while high speed transferring (dubbing).	You can record for a long period of time on 1 disc. For example, using LP mode, you can record approximately 4 hours on 1 (4.7 GB) disc (➡ page 13). e.g., 1 hour TV drama  Only one episode using XP mode 4 episodes using LP mode
Transferring (dubbing) times	➡below, Approximate transferring (dubbing) times	The same amount of time it takes to record the source
Picture quality	Original picture quality	Can change※
Are chapters/thumbnails maintained?	Yes	No (One title is recorded as one chapter. Thumbnails return to the default position.)
Other operations while transferring (dubbing)	You can record/play using the HDD.	No

※If you select a recording mode with better picture quality than the original, the picture quality does not improve. (However, it does prevent against degradation of picture quality.)

■ Approximate transferring (dubbing) times (Max. speed)

HDD		3× high speed recording compatible DVD-RAM		4× high speed recording compatible DVD-R	
Recording mode	**Recording time**	**Required time**	**Speed**	**Required time**	**Speed**
XP	1 hour	Approx. 20 min.	3×	Approx. 15 min.	4×
SP	2 hours		6×		8×
LP	4 hours		12×		16×
EP (6H)	6 hours		18×		24×
EP (8H)	8 hours		24×		32×

Note

- When recording or playing while transferring (dubbing), the unit may not use the maximum recording speed.
- Depending on the condition of the disc, the unit may not transfer (dub) using the maximum speed.

Regarding high speed transfer (dubbing) to DVD-R

To high speed transfer (dub) titles (or play lists created from those titles), set "DVD-R High-Speed Recording" to "On" before recording to the HDD (➡ page 40).

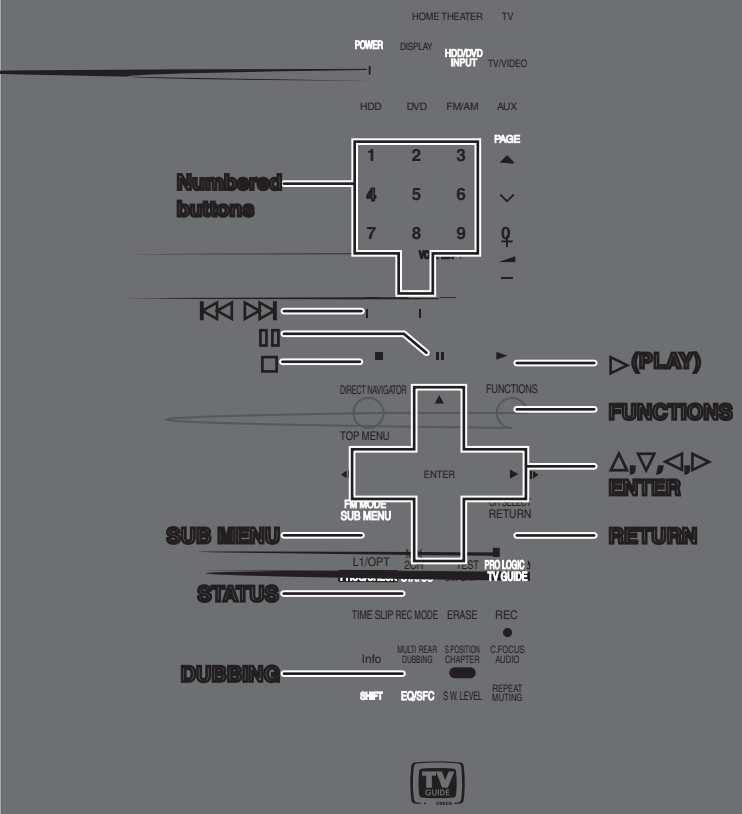
However, in the following cases, transferring (dubbing) to DVD-R using the high speed mode does not work.

- Play lists created from titles using a variety of recording modes
- Play lists created from multiple titles using FR recording mode
- Play lists mixed with a variety of audio types (Dolby Digital and LPCM, etc.)
- Titles that contain many erased segments.

Regarding transferring (dubbing) of digital broadcasts that allow "One time only recording"

You can transfer (dub) a recorded title to a CPRM (➡ page 45) compatible DVD-RAM; however, the title is erased from the HDD.

- You cannot use one touch transfer (dubbing). Use the transferring (dubbing) list (➡ page 32).
- Titles will not be transferred if they are protected (➡ page 27).
- You cannot transfer play lists created from "One time only recording" titles.
- Titles with recording limitations and play lists cannot be registered on the same transferring (dubbing) list.


HOME THEATER
TV
POWER
DISPLAY
HDD/DVD INPUT
TV/VIDEO
HDD
DVD
FM/AM
AUX
PAGE
1
2
3
4
5
6
7
8
9
0
Numbered buttons
▷(PLAY)
DIRECT NAVIGATOR
FUNCTIONS
FUNCTIONS
TOP MENU
△,▽,◁,▷
ENTER
ENTER
FM MODE/
SUB MENU
RETURN
SUB MENU
RETURN
L1/OPT
PRO LOGIC/
TV GUIDE
STATUS
TIME SLIP
REC MODE
ERASE
REC
Info
MULTI REAR DUBBING
S.POSITION CHAPTER
C.FOCUS AUDIO
DUBBING
SHIFT
EQ/SFC
S.W.LEVEL
REPEAT MUTING

7 Press [▲, ▼] to select "Start dubbing" and press [ENTER].

Press [◄, ►] to select "Yes" and press [ENTER] to start transferring (dubbing).

Transferring (dubbing) list icons

	Titles and play lists that can be transferred (dubbed) in high speed mode to DVD-R (➡ page 40)
	Title with "One time only recording" restriction
	Titles erased from the HDD by recording restrictions after transferring (dubbing).
	Title or play list contains still picture(s) ●Still picture(s) cannot be transferred (dubbed).
"Dubbing list"	Data size recorded to the transfer (dubbing) destination ●For normal speed transfer (dubbing), the data size changes according to the recording mode. ●For high speed transfer (dubbing), this is the total "Capacity". [When transferring (dubbing) to the HDD, the management information is included so the data size is actually larger than this total.]

■ To edit the transferring (dubbing) list

Select the item in step 5 (➡ page 32, right column)
1 Press [SUB MENU].
2 Press [▲, ▼] to select the operation and press [ENTER].
※ Multiple editing is possible (➡below).

To cancel all registered transferring (dubbing) setting and lists
In step 3 (➡ page 32, right column)
1 Press [▲, ▼] to select "Cancel all" and press [ENTER].
2 Press [◄, ►] to select "Yes" and press [ENTER].
●Transferring (dubbing) lists are also cancelled in the following cases.
–The source title or play list is erased.
–The tray is opened or the unit is turned off when the transferring (dubbing) source is DVD-RAM.

To show other pages
Press [▲, ▼, ◄, ►] to select "Previous" or "Next" and press [ENTER].
●You can also press [I◄◄, ►►I] to show other pages.
Multiple editing
Select with [▲, ▼, ◄, ►] and press [❚❚]. (Repeat.)
Press [ENTER] to register to the list.
●A check mark appears. Press [❚❚] again to cancel.
●When you switch between the "Title" and "Play List" tab, the check mark is cancelled.

Transferring (dubbing) a finalized DVD-R

DVD-V → HDD

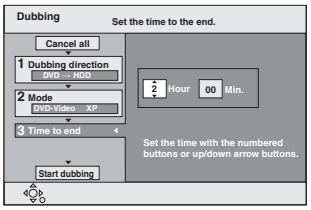
While playing a disc, the content being played is transferred (dubbed) to the HDD according to the set time.

●Operations and on screen displays during transfer (dubbing) are also recorded.
●Almost all DVD-Video on sale have been treated to prevent illegal copying, and cannot be transferred (dubbed).
●The following cannot be transferred (dubbed): DVD-Audio, Video CD, Audio CD and so on.

After performing steps 1–4 (➡ page 32, right column)

5 Press [▲, ▼] to select "Time to end" and press [►].

6 Press [◄, ►] to select "Hour" and "Min." and press [▲, ▼] to set the recording time.



●You can also set the recording time with the numbered buttons.
●Set a few minutes longer than the source title, in order to include the operation time before play begins.

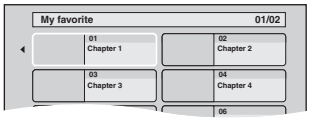
7 Press [◄] to select "Time to end" and press [▼].

8 Press [▲, ▼] to select "Start dubbing" and press [ENTER].

Press [◄, ►] to select "Yes" and press [ENTER] to start transferring (dubbing).
The disc top menu is displayed.
●Disc play automatically begins from title 1 when "Title 1" is selected from the "Select First play" menu when finalizing the disc (➡ page 35).

9 When the top menu is displayed

Press [▲, ▼, ◄, ►] to select the title you want to start transferring (dubbing), and press [ENTER].



While playing in order, all the titles after the selected title are recorded until the set time. (After the last title on the disc has finished playing the top menu is recorded until the set time is reached.)

To end transfer (dubbing) manually
Press [■].

Note
●The screen on the right (screen saver) is recorded at the beginning.
●Recorded as 1 title from the start of transfer (dubbing) to the end.
●If play does not begin automatically or if the top menu does not display automatically, press [►] (PLAY) to start.
●Even if you transfer (dub) a high quality video/audio DVD, the original picture and audio quality cannot be exactly replicated.

■ To stop transferring (dubbing)

Press and hold [RETURN] for 3 seconds.
●If stopped partway, transferring (dubbing) will be up to that point. However, in high speed mode, only titles that have completed transferring (dubbing) at the point stopped are transferred (dubbed). [Even if the title was not transferred (dubbed) to the DVD-R, the amount of remaining writable disc space becomes less.]

■ To return to the previous screen

Press [RETURN].

■ Recording and playing while transferring (dubbing)

You can record and play using the HDD while high speed transferring (dubbing).
Press [ENTER] to cancel the screen display.
●**To confirm the current progress**
Press [STATUS].

Note
●You cannot perform chasing play or edit, etc. while transferring (dubbing).
●Timer recordings executed while transferring (dubbing) are recorded to the HDD regardless of the recording drive settings.
●You cannot play a play list while transferring (dubbing) titles with "One time only recording" restriction (➡ page 31).

2

To exit the FUNC
Press [FUNCTIO

Disc Name

RAM DVD-R

➡ page 30, Entering text

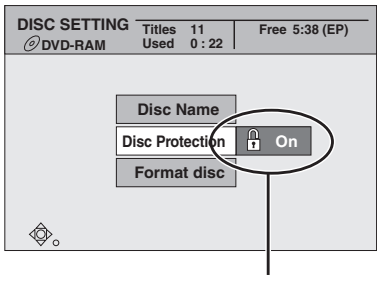
The disc name is displayed in the FUNCTIONS window.

Disc Protection

RAM

If set, this will protect the disc from accidental erasure.

Press [◄, ►] to set disc protection and press [ENTER].



The lock symbol appears closed when the disc is write-protected.

Format disc/Format

(➡ page 45, Formatting)

HDD

Erase the entire contents on the HDD.

RAM

Some DVD-RAM are unformatted. Format them before using them in this unit. Formatting also allows you to erase the entire contents of a disc.

1 Press [◄, ►] to select “Yes” and press [ENTER].

2 Press [◄, ►] to select “Start” and press [ENTER].

A message appears when formatting is finished.

3 Press [ENTER].

To stop formatting

Press [RETURN].

- You can cancel formatting if it takes more than 2 minutes. The disc must be reformatted if you do this.

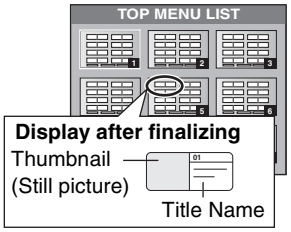
- **Do not disconnect the AC power supply cord while the message “Formatting ..” is on the television. This can render the disc unusable.**
- Formatting normally takes a few minutes; however, it may take up to a maximum of 70 minutes. RAM
- Formatting cannot be performed on DVD-R or CD-R/RW.

TOP MENU

DVD-R

Prior to finalizing, you can select the background that will be displayed as the DVD-Video top menu after finalizing.

- You can change thumbnails displayed in the Top menu. (➡ page 27, Change Thumbnail)



Press [▲, ▼, ◄, ►] to select the background and press [ENTER].

Select First play

DVD-R

Select whether to show the top menu after finalizing the disc.
Do this before finalizing the disc.

Press [▲, ▼] to select “Top Menu” or “Title 1” and press [ENTER].

Top Menu: The top menu appears first.
Title 1: The disc content is played without displaying the top menu.

Finalize

(➡ page 45, Finalize)

DVD-R

You can play DVD-R on compatible DVD players by finalizing them on this unit, effectively making them into DVD-Video that complies with DVD-Video standards.

- Set “TOP MENU” and “Select First play” (➡above) before finalizing the disc.

1 Press [◄, ►] to select “Yes” and press [ENTER].

2 Press [◄, ►] to select “Start” and press [ENTER].

A message appears when finalizing is finished.

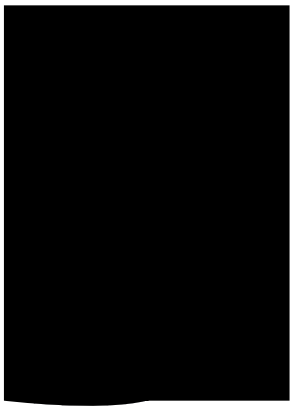
3 Press [ENTER].

- **Do not disconnect the AC power supply cord while the message “Finalizing the disc” is on the television. This will render the disc unusable.**
- Finalizing takes up to 15 minutes.
- You cannot finalize DVD-R recorded on other manufacturer’s equipment.
- If you finalize a recorded DVD-R on Panasonic equipment other than this unit, the background selected as “TOP MENU” may not display.

	Before finalizing	After finalizing
Disc display on this unit	DVD-R	DVD-V
Recording/Editing/Entering name	○	×
Play on other players	×	○

DVD-R finalized on this unit may not be playable on other players due to the condition of the recording.

- Visit Panasonic’s homepage for more information about DVDs.
  For U.S.A.: **http://www.panasonic.com/playDVD-R**
  For Canada: **www.panasonic.ca**



Preparation
- Turn off TV while using radio since noise may occur.
- Switch [HOME THEATER, TV] to "HOME THEATER".
- Press [FM/AM] to select "FM" or "AM" as the source.

Manual tuning

1 Press [◀◀] or [▶▶] to select the frequency of the required station.

Main unit: Press [∨ TUNE] or [TUNE ∧] .

TUNED: Displayed when a radio station is tuned.

ST: Displayed when a stereo FM broadcast is being received.

Press and hold [◀◀] or [▶▶] ([∨ TUNE] or [TUNE ∧] on the main unit) until the frequency starts scrolling to start automatic tuning. Tuning stops when a station is found.

2 Adjust the volume.

■ If noise is excessive

Press [SHIFT]+[FM MODE].

Each time you press the button:
FM:Changes between stereo and forced monaural.
AM:BP1⟷BP2 (BP=Beat Proof)
Select either BP1 or BP2, whichever receives better reception.
The FM mode is canceled when you change the frequency.

■ FM frequency step

The step is factory-set to 0.2 MHz, but you can change it to receive broadcasts allocated 0.1-MHz steps.

1 Press [FM/AM] to select "FM".
2 Press and hold [■] on the main unit.

After a few seconds the display changes to show the current minimum frequency. Continue to hold the button down. The minimum frequency changes and the step is changed.
To return to the original step, repeat the above steps.

Note

Any FM/AM frequencies preset in channels will be changed by this procedure. Preset them again.

Preset channels to make selection simple.
Up to 30 stations can each be set in the FM and AM bands.

1 Press [◀◀] or [▶▶] to tune to the lowest frequency ("FM 87.9" MHz or "FM 87.5" MHz).

2 Press and hold [ENTER].

Release the button when "AUTO" is lit on the display.

The tuner presets all the stations it can receive into the channels in ascending order.
- "SET OK" is displayed when the stations are set. The last station to be set is then played.

3 Repeat steps 1 and 2 to set the AM bands (the lowest frequency is "AM 520" kHz).

- The unit of display is MHz for FM radio and kHz for AM radio when the selector is in FM/AM mode.
- **"ERROR" is displayed**
  Presetting was unsuccessful. Preset manually.

1 Tune to the station (➜ left).

2 Press [ENTER].

3 While "MEMO" is flashing on the display

Press the numbered buttons to select a channel and press [ENTER].

Alternatively, press [CH ∧] or [CH ∨] then press [ENTER].

The station occupying a channel is erased if another station is preset in that channel.

1 Press [FM/AM] to select"FM" or "AM".

2 Press the numbered buttons or [∧ ∨ CH] to select the channel.

e.g., "2": [0] ➡ [2]
"12": [1] ➡ [2]

Note

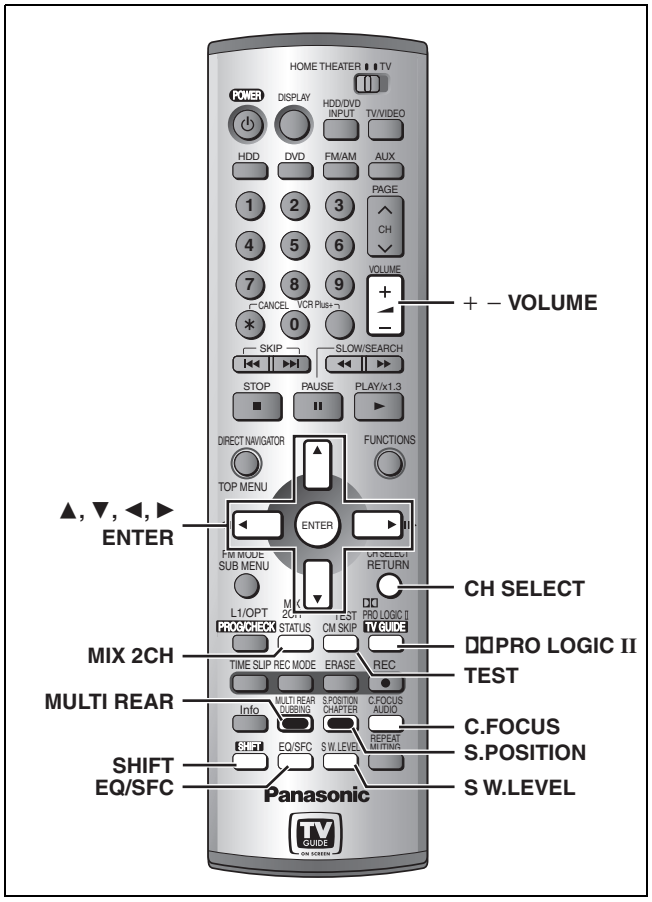
If there is nearby electrical interference during auto tuning the frequency may come to a halt without locating a channel. Turn off the power of the nearby electrical equipment.

■ Use FM outdoor antenna if radio reception is poor.

- Disconnect the FM indoor antenna.
- The antenna should be installed by a competent technician.

Note

- Disconnect the outdoor antenna when the unit is not in use.
- Do not use the outdoor antenna during an electrical storm.



Dolby Digital and DTS

- Dolby Digital and DTS are digital encoding systems used on DVD to carry surround sound. Both were originally developed for use in cinemas.
- This unit automatically recognizes and decodes these systems.

Software encoded with Dolby Digital can be identified with this mark.

Software encoded with DTS can be identified with this mark.

Play a Dolby Digital or DTS source.

The Dolby Digital or DTS indicator lights.

■ To down-mix Dolby Digital or DTS (multiple-channel) signals to 2 channels

Press [SHIFT]+[MIX 2CH].

To cancel, press [SHIFT]+[MIX 2CH] again.

When "D.MIX" flashes on the display

DVD-A

The DVD-Audio contains multiple-channel signals that cannot be down-mixed.

- When connected with headphones, the following sound field systems (➡ below, ➡ page 38) cannot be used. (Excluding "BASS/TREBLE" control)
- You may experience a reduction in sound quality when these sound field systems are used with some sources. If this occurs, turn the sound field system off.

Dolby Pro Logic II

The Dolby Pro Logic II processor works not only on sources recorded with Dolby Surround, but also on any stereo source.

1 Press [SHIFT]+[DOLBY PRO LOGIC II].

Each time you do this:
OFF→MOVIE→MUSIC→PANORAMA

MOVIE: Use this mode when playing movie software, especially videotapes, recorded in Dolby Surround.
MUSIC: Adds surround effects to stereo sources.
PANORAMA: Sound is spread out more so you feel like you are surrounded by music.

2 Play a Dolby Surround or stereo source.

To cancel

Select "OFF".

Note

This does not work when playing multi-channel sources.

Adjusting the bass and treble with manual equalizer

Press [EQ/SFC] several times to select "BASS/TREBLE".

BASS: [◄]⟶[▲ ▼] −6 to +6 (in 2 units)
TREBLE: [►]⟶[▲ ▼] −6 to +6 (in 2 units)

To cancel

Press [EQ/SFC] several times to select "FLAT".

- Each level for "BASS" and "TREBLE" remains intact. (Even after the unit is turned off.)

Using the built-in sound quality settings (SFC—Sound Field Control)

This function derives multi-channel surround from any stereo program material.

Press [EQ/SFC] several times to select "SFC AV/MOVIE" or "SFC MUSIC".

SFC AV/MOVIE: [◄ ►]

DRAMA↔ACTION↔SPORTS
↕ ↕
MONO※↔GAME↔MUSICAL

※For monaural sound

SFC MUSIC: [◄ ►]

LIVE↔POP/ROCK↔VOCAL
↕ ↕
PARTY※↔DANCE↔JAZZ

※Sound is in stereo regardless of the direction you are facing.

This function does not work when:
–Playing multi-channel sources.
–"Dolby Pro Logic II" (➡above) is on.
–"Virtual Rear Surrrond" or "Multi Rear Surround" (➡ page 38) is on.

- **To check the current setting**
  Press [EQ/SFC]
- **To cancel**
  Press [EQ/SFC] several times to select "FLAT".
  - Each mode remains intact. (Even after the unit is turned off.)

Refer to the control reference on page 37.

Center Focus

(Discs where the dialogue is recorded in the center channel)

You can make the sound of the center speaker seem like it is coming from within the television.

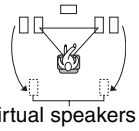
Press [SHIFT]+[C.FOCUS].

Each time you do this:
CENTER FOCUS ON→CENTER FOCUS OFF

- This will have less effect when Dolby Pro Logic II is turned on.
- This doesn't work when "SFC" is lit on the display.

Virtual Rear Surround

This mode is useful if you have to place your surround speakers near the front speakers due to the layout of your room.
This mode makes it seem like the sound from the surround speakers is coming from behind you.


Virtual speakers

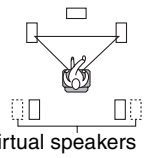
Press and hold [SHIFT]+[MULTI REAR] for more than 5 seconds.

Each time you do this:
V.R.S ON⟷V.R.S OFF

This function works with:
–multi-channel discs
–2-channel discs with Dolby Pro Logic II on

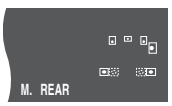
Multi Rear Surround

This mode makes it seem like sound is coming from multiple rear surround speakers virtually when connected with surround speakers.


Virtual speakers

Press [SHIFT]+[MULTI REAR].

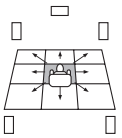
Each time you do this:
M.R.S ON⟷M.R.S OFF



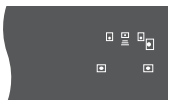
This function works with:
–multi-channel discs
–2-channel discs with Dolby Pro Logic II on

Seat position

Using this function makes you feel like you are sitting in the ideal seating position (in the center of the circle formed by the speakers), even if you cannot due to the layout of your room.



1 Press [SHIFT]+[S.POSITION].



2 While "ON" is displayed

Press [▲, ▼, ◄, ►] to select a position.

This function works with:
–multi-channel discs
–2-channel discs with Dolby Pro Logic II on

To cancel
Press [SHIFT]+[S.POSITION] again.

Note
- This doesn't work when "SFC" is lit on the display.
- While virtual rear surround is on, the seat position is changed in three horizontal steps.

Adjusting the subwoofer level

Press [S W.LEVEL].

Each time you press the button:
SUB W 1→SUB W 2→SUB W 3→SUB W 4 (factory preset)

- This doesn't work when "SFC" is lit on the display.

Speaker level adjustments

Adjust the level of the speakers so they are the same apparent level as the front speakers where you would normally be sitting and listening. (L, R ➡below, Balance)

Preparation
- Dolby Digital and DTS: Turn off the other sound field systems.
- Dolby Pro Logic II: Press [SHIFT]+[DD PRO LOGIC II].

1 Press [SHIFT]+[TEST] to output a test signal.
Lch: Front left
Cch: Center
Rch: Front right
RSch: Right surround
LSch: Left surround

2 Press [VOLUME +] or [−] to set the volume level normally used for listening.

3 Press [▲] (to increase) or [▼] (to decrease).
L, R: (➡below, Balance)
C, RS, LS: −6 dB to +6 dB

To stop the test signal, press [SHIFT]+[TEST] again.

■ To adjust speaker level during play

(This doesn't work when "SFC" is lit on the display.)

1 Press [SHIFT]+[CH SELECT] to select the speaker.
L R→Cch→RSch→LSch→SWch
SW: Subwoofer
- You can only adjust SW if there is output from the subwoofer channel.

2 Press [▲] (to increase) or [▼] (to decrease).
L, R: (➡below, Balance)
C, RS, LS: −6 dB to +6 dB
SW: −6 dB to +6 dB

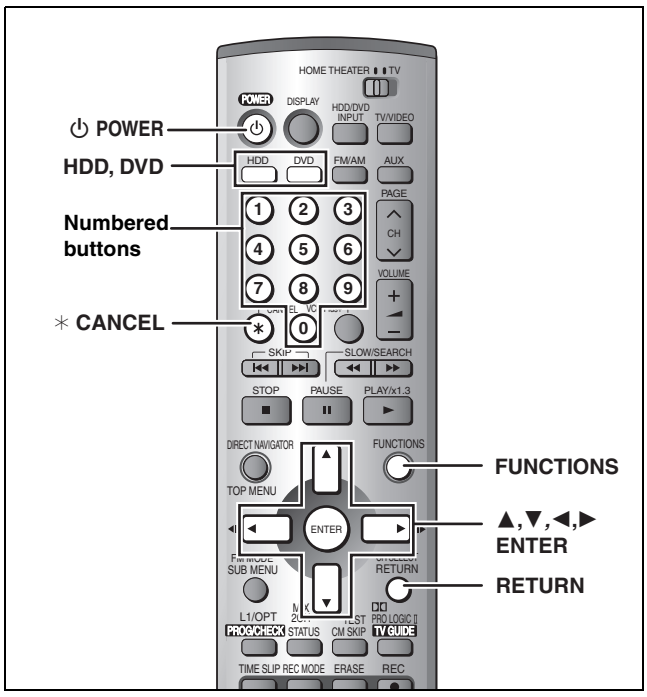
Balance

You can adjust the balance of the front speakers.

1 Press [SHIFT]+[CH SELECT] to select "L R".

2 Press [◄, ►] to adjust the "L", "R" balance.

RADIO & SOUND



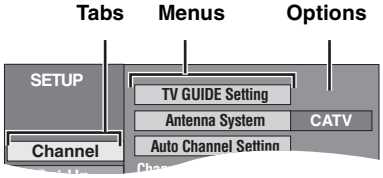
Common procedures

Preparation
Press [HDD] or [DVD] to set up.

1 **While stopped**

Press [FUNCTIONS].

2 **Press [▲, ▼] to select "SETUP" and press [ENTER].**



3 **Press [▲, ▼] to select the tab and press [▶].**

4 **Press [▲, ▼] to select the menu and press [ENTER].**

5 **Press [▲, ▼] to select the option and press [ENTER].**

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].

Summary of settings

The settings remain intact even if you switch the unit to standby.

※1 You need to set these menus only when you do not use TV Guide On Screen™ system. These menus turn gray and become un-selectable after this unit downloads the television program list.

※2 You can set these menus only after "Auto Channel Setting" is completed.

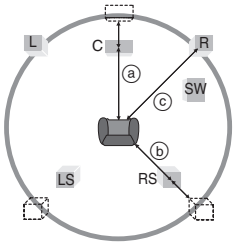
Tabs	Menus	Options (Underlined items are the factory presets.)
Channel	**TV GUIDE Setting** Set the TV Guide On Screen™ system.	
	Antenna System※2 Select to suit the type of antenna you are using.	●TV ●<u>CATV</u>
	Auto Channel Setting※1 (➡ page 41)	–
	Preset Channel Captions※2 (➡ page 42)	–
	Manual Channel Captions※2 (➡ page 42)	–
Set Up	**Off Timer** Select how long the unit remains on when it is not being used.	●2 hr ●<u>6 hr</u> ●Off
	Remote Control Code (➡ page 8)	●<u>Set Code 1</u> ●Set Code 2 ●Set Code 3
	Auto Clock Setting※1 (➡ page 41)	
	Manual Clock Setting※1 (➡ page 7)	
	Time Zone Adjust※1 (➡ page 42)	●−1 ●<u>0</u> ●+1
	Re-initialize Settings This returns all values in the SETUP menus, except for the clock, channel settings, ratings level, and on-screen language, to the default settings.	●Yes ●<u>No</u>
Disc	**Languages** Choose the language for audio, subtitle and disc menus. DVD-V ●Press [ENTER] to show the following settings. ●Some discs start in a certain language despite any changes you make here.	●Enter a code (➡ page 45) with the numbered buttons when you select "Other ✳✳✳✳". When the selected language is not available on the disc, the default language is played. There are discs where you can only switch the language from the menu screen (➡ page 20).
	Audio Language	●<u>English</u> ●French ●Spanish ●Original: The original language of each disc will be selected. ●Other ✳✳✳✳
	Subtitle Language	●<u>Automatic</u>: If the language selected for "Audio Language" is not available, subtitles of that language will automatically appear if available on that disc. ●English ●French ●Spanish ●Other ✳✳✳✳
	Menu Language	●<u>English</u> ●French ●Spanish ●Other ✳✳✳✳
	Ratings Set a ratings level to limit DVD-Video play. Follow the on-screen instructions. Enter a 4-digit password with the numbered buttons when the password screen is shown. ●Do not forget your password.	●<u>8 No Limit</u>: All DVD-Video can be played. ●1 to 7: Prohibits play of DVD-Video with corresponding ratings recorded on them. ●0 Lock All: Prohibits play of all DVD-Video. ●Unlock Recorder ●Change Password ●Change Level ●Temporary Unlock

Continued on next page

Tabs	Menus	Options (Underlined items are the factory presets.)
Disc Continued	**Recording Time in EP Mode** Select the maximum number of hours for recording in EP mode (➡ page 13, Recording modes and approximate recording times).	●EP (6H): You can record for 6 hours on an unused 4.7 GB disc. ●<u>EP (8H)</u>: You can record for 8 hours on an unused 4.7 GB disc.
	Play DVD-Audio in Video Mode Select "Video (On)" to play DVD-Video content on some DVD-Audio.	●Video (On):The setting returns to "Audio (Off)" when you change the disc or turn the unit off. ●<u>Audio (Off)</u>
	DVD-R High-Speed Recording When high speed transferring (dubbing) a title to DVD-R, it is necessary to turn this setting "On" before recording to HDD,; however, the screen size, etc. is restricted (➡ right). We recommend turning the setting "Off" when recording to media other than DVD-R. You cannot transfer (dub) titles to a DVD-R using the high speed mode if you recorded the program on a DVD recorder that does not have the "DVD-R High-Speed Recording" function, even when transferring (dubbing) to the HDD with this setting "On".	●On: Makes high speed mode transferring (dubbing) to DVD-R possible. Press [◄, ►] to select "Yes" and press [ENTER]. ["▶▶◎" appears in the transferring (dubbing) list. ➡ page 32] –Pictures are saved at 4:3. –Hybrid VBR Resolution (➡ below) setting is "Fixed". –For SAP broadcasts use "Select MTS" (➡below). Select the type of audio in advance. ●<u>Off</u>
Video	**3-D Y/C Separation**	●<u>On</u>: Reduces noise by separating the luminance (Y) and color (C) signals when recording. ●Off: Reduces the ghosting that occurs when recording fast moving images.
	Hybrid VBR Resolution (➡ page 45, VBR)	●Automatic: The resolution is automated to provide efficient recording with less block noise. HDD RAM ●<u>Fixed</u>: The resolution is fixed to ensure that there is no loss of source picture resolution while recording.
	Still Mode Select the type of picture shown when you pause play (➡ page 45, Frames and fields).	●<u>Automatic</u> ●Field: Select if jittering occurs when "Automatic" is selected. ●Frame: Select if small text or fine patterns cannot be seen clearly when "Automatic" is selected.
	Seamless Play Select the play mode for play list chapter segments.	●<u>On</u>: The chapters in play lists are played seamlessly. This does not work when there are several audio types included on the play list and when using Quick View. Additionally, the positioning of chapter segments may change slightly. ●Off: The points where chapters in play lists change are played accurately, but the picture may freeze for a moment.
	Line-in NR Reduces video tape noise while transferring (dubbing). ●When noise reduction is on, "3-D Y/C Separation" (➡ above) does not work regardless of the setting.	●<u>Automatic</u>: Noise reduction only works on picture input from a video tape. ●On: Noise reduction works for any video input. ●Off: Noise reduction is off. Select when you want to record input as is.
	Black Level Control Select normal, lighter or darker for adjusting the black level control to the desired setting for picture enhancement.	
	Input Level Adjusts the black level of the input signal.	●Lighter ●<u>Darker</u>
	Output Level (Composite/S Video) Adjusts the black level of the output signal from the VIDEO OUT and S-VIDEO OUT terminal.	●<u>Lighter</u> ●Darker
	Output Level (Component) Adjusts the black level of the output signal from the COMPONENT VIDEO OUT ($Y/P_B/P_R$) terminals.	●Lighter ●<u>Normal</u> ●Darker
Audio	**Search Audio & PLAY ×1.3** You may hear sound regardless of this setting with some discs.	●<u>On</u>: Audio is heard during first level search forward. ●Off: Audio is not heard during search. Quick View (➡ page 21) does not work.
	D. Range Compression DVD-V (Dolby Digital only) Change the dynamic range for late night viewing.	●On ●<u>Off</u>
	Select MTS Select the audio recording type, main or secondary (SAP) audio when: –Recording or transferring (dubbing) to a DVD-R. –Recording or transferring (dubbing) sound in LPCM. (➡ below, Audio for XP Recording) You cannot select this when recording from an external source onto DVD-R. Select audio on the other equipment.	●<u>Main</u> ●SAP
	Audio for XP Recording Choose the audio type when recording or transferring (dubbing) with XP mode.	●<u>Dolby Digital</u> (➡ page 45) ●LPCM (➡ page 45) –The picture quality of LPCM recordings may be lower than that of normal XP mode recordings. –The audio recording becomes Dolby Digital even if you selected LPCM when using a recording mode other than XP. –When recording MTS broadcast, select the type of audio in advance from "Select MTS" (➡ above)

Continued on next page

Tabs	Menus	Options (Underlined items are the factory presets.)
Audio Continued	**Speaker** Set the delay time for your center and surround speakers	Multi Channel Center: 0.0/1.0/2.0/3.0/4.0/5.0 ms Surround (L/R): 0.0/5.0/10.0/15.0 ms



Values

If distance ⓐ or ⓑ is greater than or equal to distance ⓒ, set to "0".
If distance ⓐ or ⓑ is less than distance ⓒ, set as follows.

ⓐ **Center speaker**

Difference	Setting
Approx. 30 cm (1 foot)	1.0 ms
Approx. 60 cm (2 feet)	2.0 ms
Approx. 90 cm (3 feet)	3.0 ms
Approx. 120 cm (4 feet)	4.0 ms
Approx. 150 cm (5 feet)	5.0 ms

ⓑ **Surround speakers**

Difference	Setting
Approx. 150 cm (5 feet)	5.0 ms
Approx. 300 cm (10 feet)	10.0 ms
Approx. 450 cm (15 feet)	15.0 ms

●When you change the surround speaker setting for Dolby Digital, the setting also changes for Dolby Pro Logic II.

Display	**Status Messages** Choose whether to show status messages automatically.	●Automatic ●Off
	On-screen Language Choose the language for these menus and on-screen messages.	●English ●Español ●Français –Only English is displayed in the TV Guide On Screen™ system regardless of the settings. Other languages cannot be displayed.
	Blue Background Select "Off" if you do not want to have the unit show the blue background when reception is weak.	●On ●Off
	Front Display Changes the brightness of the unit's display.	●Bright ●Dim ●Automatic: The display turns dark during play, and reappears momentarily if a button is pressed. When the unit is turned off all displays disappear. While using this mode the standby power consumption can be reduced.
TV Screen	**TV Type** (➡ page 8)	●Aspect 4:3 & 480I ●Aspect 4:3 & 480P ●Aspect 16:9 & 480I ●Aspect 16:9 & 480P
	4:3 TV Settings for DVD-Video Select how DVD-Video widescreen picture is shown on a 4:3 standard aspect television.	●Pan & Scan: Video recorded for a widescreen is played as Pan & Scan (unless prohibited by the producer of the disc). ●Letterbox: Video recorded for a widescreen is played in the letterbox style.
	4:3 TV Settings for DVD-RAM Select how DVD-RAM widescreen picture is shown on a 4:3 standard aspect television.	●4:3: Titles played as recorded. ●Pan & Scan: Video recorded for a widescreen is played as Pan & Scan. ●Letterbox: Video recorded for a widescreen is played in the letterbox style.

Channel/Clock settings when TV Guide On Screen™ system is not used

Refer to the control reference on page 39.

Preparation:

If the television program list has already been downloaded, return the unit to the factory preset condition using the steps indicated below.

When the unit is on and stopped

① **Press and hold [∨ CH] and [∧ CH] on the main unit for about five seconds.**
The unit turns off.

② **Press [⏻ POWER] to turn the unit on.**

③ **Complete the TV Guide On Screen™ system setup (until [ENTER] is pressed after the "Watch TV" message screen is displayed).**

Note

You can set timer recording only manually after you set the unit with "Auto Channel Setting".

Auto channel/clock settings

1 Press [FUNCTIONS].

2 Press [▲, ▼] to select "SETUP" and press [ENTER].

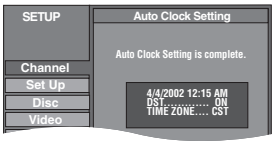
3 Press [▲, ▼] to select "Channel" and press [▶].

4 Press [▲, ▼] to select "Auto Channel Setting" and press [ENTER].

5 Press [◀, ▶] to select "Yes" and press [ENTER].

6 Press [ENTER].

Auto Channel Setting starts. This takes a few minutes. The unit then proceeds with Auto Clock Setting. The time is displayed when finished.



●DST, Daylight Saving Time, shows the summertime setting.
●TIME ZONE shows the time difference from Greenwich meantime (GMT).

EST (Eastern Standard Time) = GMT −5
CST (Central Standard Time) = GMT −6
MST (Mountain Standard Time) = GMT −7
PST (Pacific Standard Time) = GMT −8
AST (Alaska Standard Time) = GMT −9
HST (Hawaii Standard Time) = GMT −10
For other areas: xx hr

●If the Auto Clock Setting does not start automatically, select "Auto Clock Setting" from the "Set Up" tab.
●If the time was not set correctly, use manual clock setting (➡ page 7) or time zone adjust.

7 Press [ENTER].

●**The unit configures channels according to the Antenna System settings as follows.**

Antenna system	Band	Channel
TV	VHF	2–13
	UHF	14–69
CATV	VHF	2–13
	CATV LOW BAND	95–99
	CATV MID/SUPER BAND	14–36
	CATV HYPER BAND	37–65
	ULTRA BAND	66–94 100–125
	SPECIAL CATV CHANNEL	1

Refer to the control reference on page 39.

Time Zone Adjust

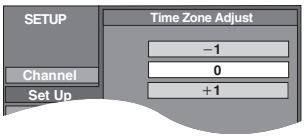
Adjust the time zone (−1 or +1) if it was not set correctly with auto clock setting.
You cannot change this setting if you set the clock manually.

1 **Press [FUNCTIONS].**

2 **Press [▲, ▼] to select “SETUP” and press [ENTER].**

3 **Press [▲, ▼] to select “Set Up” and press [►].**

4 **Press [▲, ▼] to select “Time Zone Adjust” and press [ENTER].**



5 **Press [▲, ▼] to select “−1” or “+1” and press [ENTER].**

To exit the screen
Press [RETURN] several times.

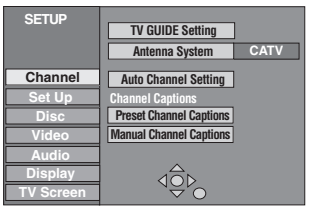
To return to the previous screen
Press [RETURN].

Channel captions

You can use the preset captions, or manually enter new ones yourself.
The captions you enter are displayed when the channel is displayed and in the Direct Navigator screen.
●You can set channel captions only after “Auto Channel Setting” is completed.

1 **Press [FUNCTIONS].**

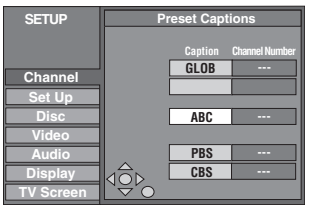
2 **Press [▲, ▼] to select “SETUP” and press [ENTER]**



3 **Press [▲, ▼] to select “Channel” and press [►].**

Preset Channel Captions

4 **Press [▲, ▼] to select “Preset Channel Captions” and press [ENTER].**



5 **Press [▲, ▼] to select the caption and press [►].**

You can choose from the following captions.
ABC, PBS, CBS, CNN, FOX, ESPN, NBC, HBO, A&E, AMC, FAM, MAX, MTV, SHOW, TBS, USA, TNT, CBC, UPN, CTV, WB, TSN, DSC, GLOB

●When selecting the caption, press and hold [▲, ▼] to scroll up and down the screen.

6 **Press [▲, ▼] to select the channel corresponding to the caption and press [◄].**

●Channels are only displayed if they contain a station and if captions have not been added manually.
●To delete the channel number, press [∗ CANCEL].

Repeat steps 5 and 6 to enter other channels.

7 **Press [ENTER].**

Manual Channel Captions

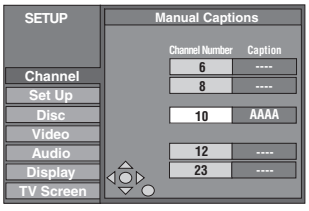
4 **Press [▲, ▼] to select “Manual Channel Captions” and press [ENTER].**

5 **Press [▲, ▼] to select the channel and press [►].**

●Channels are only displayed if they contain a station and if preset captions have not been added.

6 **Press [▲, ▼] to select the first character and press [►].**

●You can choose from the following characters:
A–Z, 0–9, -, &, !, /, (space)
●To delete the caption, press [∗ CANCEL].
●Repeat this step to enter the other characters.



7 **Press [◄, ►] to return to the “Channel Number” column.**

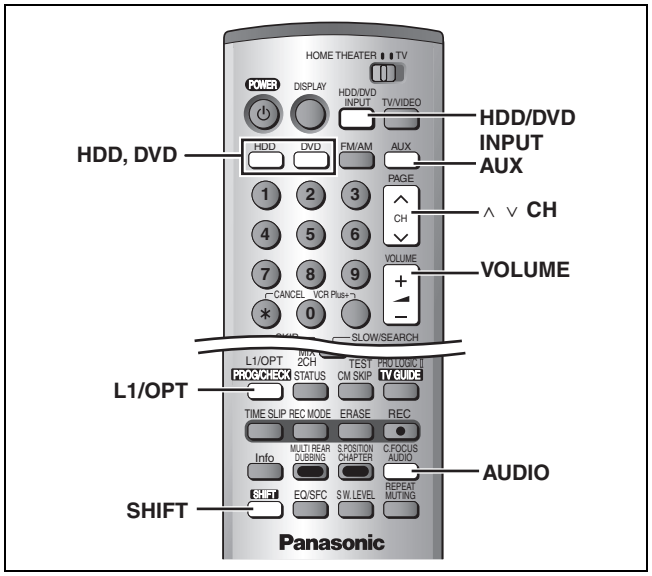
Repeat steps 5–7 to enter other channels.

8 **Press [ENTER].**

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].

- The equipment connections described are examples.
- Peripheral equipment and optional cables sold separately unless otherwise indicated.
- Before connection, turn off all equipment and read the appropriate operating instructions.



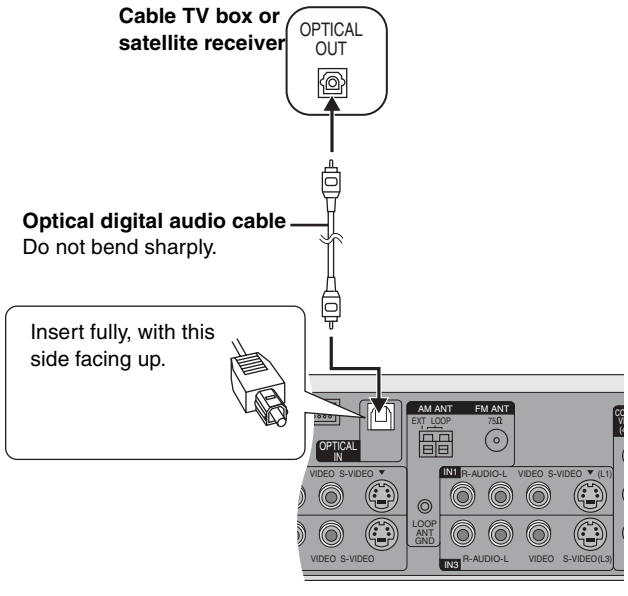
Receiving digital audio using the optical connection

If your cable TV box or satellite receiver has an OPTICAL OUT terminal you can connect with this unit's OPTICAL IN terminal to enjoy digital audio including multi-channel Dolby Digital. Refer to your cable TV box or satellite receiver's operating instructions for details.

Note

You cannot record digital audio received using the optical connection. Make certain to also connect to the L1 AUDIO/VIDEO terminals when using the OPTICAL IN terminal connection.

Make the following connections in combination with connections in Setup Guide, page 10.


Cable TV box or satellite receiver
OPTICAL OUT
Optical digital audio cable
Do not bend sharply.
Insert fully, with this side facing up.
OPTICAL IN

Preparation

Press [HDD] or [DVD] to select "HDD" or "DVD" as the source.

1 Press [HDD/DVD INPUT] to select "L1".

You can select the input channel by pressing [∧ ∨ CH].

2 Press [SHIFT]+[L1/OPT] to select audio input.

L1 ANALOG (factory preset): Audio input into the L1 AUDIO terminals is output to the speakers.
↕
L1 OPT: Audio input into the L1 OPTICAL IN terminal is output to the speakers.

When "L1 OPT" is selected

■ Audio reception setting

While "L1 OPT" is displayed on the unit's display

Press and hold [SHIFT]+[L1/OPT].

L1 AUTO (factory preset): When receiving Dolby Digital and PCM signals
↓ ↑
L1 PCM FIX: When receiving only PCM audio

■ When receiving Dolby Digital Dual Mono signals

You can change the audio mode.

Press [AUDIO].

MAIN⟷SAP

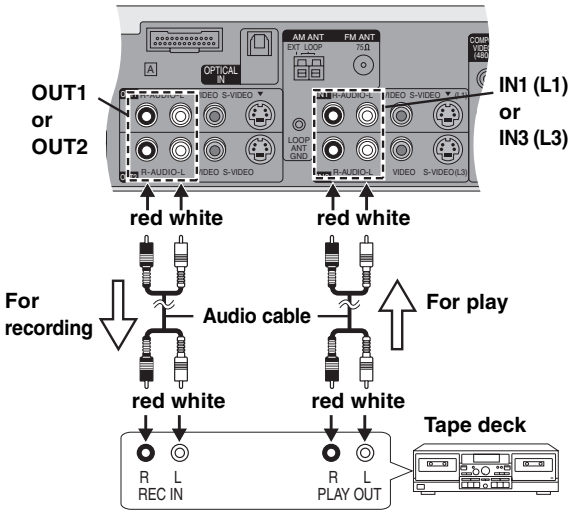
■ Dynamic range compression

You can change this setting to listen to Dolby Digital sound at low volume (such as late at night) and maintain audio clarity. It reduces the peak level in loud scenes without affecting the sound field.

Press and hold [AUDIO] for about 2 seconds.

DR COMP OFF (factory preset): The original dynamic range.
↓
DR COMP STD: The level recommended for household viewing.
↓
DR COMP MAX: The maximum allowable compression (recommended for night viewing).

Connecting other audio equipment



■ Recording audio from discs or television broadcasts to a tape deck

1 Discs: Press [HDD] or [DVD] to select "HDD" or "DVD" as the source.
Television broadcasts: Press [∧ ∨ CH] to select the channel.
2 Start recording and play.

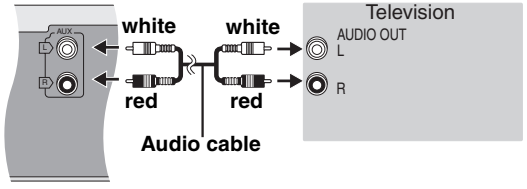
Refer to the manual of the other unit for details.

FM/AM broadcasts and audio from the L1 OPTICAL IN and AUX terminals are not output through the AUDIO OUT terminals.

■ To playback audio from a tape deck, etc., through this unit's speakers

1 Press [HDD] or [DVD] to select "HDD" or "DVD" as the source.
2 Press [HDD/DVD INPUT] to select "L1" or "L3".
3 Start play.

Enjoying TV broadcast with surround sound



1 Press [AUX] to select "AUX" as the source.
2 Turn on the television and select the channel.
3 Adjust the volume on this unit.
- Set TV volume minimum.

INFO

Specifications

■ AMPLIFIER SECTION

RMS total power output 800 W
1 kHz, 10 % total harmonic distortion
Front: 70 W per channel (4 Ω)
Center: 260 W (4 Ω)
Surround: 70 W per channel (4 Ω)
100 Hz, 10 % total harmonic distortion
Subwoofer: 260 W (4 Ω)

FTC total power output 470 W
120 Hz–20 kHz, 1.0 % total harmonic distortion
Front: 45 W per channel (4 Ω)
Center: 140 W (4 Ω)
Surround: 45 W per channel (4 Ω)
45 Hz–120 Hz, 1.0 % total harmonic distortion
Subwoofer: 150 W (4 Ω)

Input sensitivity/Input impedance
L1/L2/L3: 350 mV, 47 kΩ
AUX: 350 mV, 18 kΩ
Digital input Optical input (Dolby Digital, Linear PCM)

■ TV TUNER SECTION

Tuner system: NTSC-M
Antenna reception input: TV Channel: 2 ch–69 ch, 75 Ω
CATV Channel: 1 ch–125 ch, 75 Ω
RF Converter Output: Not provided

■ FM TUNER SECTION

Frequency range: 87.9–107.9 MHz (200-kHz step)
87.5–108.0 MHz (100-kHz step)
Antenna terminals: 75 Ω unbalanced

■ AM TUNER SECTION

Frequency range: 520–1710 kHz (10-kHz step)

■ RECORDER SECTION

Recording system: DVD Video Recording format (DVD-RAM)
DVD Video format (DVD-R)

LASER Specification
Class 1 LASER Product
Wavelength: 795 nm for CD/VCD, 658 nm for DVD
Laser power:
No hazardous radiation is emitted with the safety protection

Recordable discs:
DVD-RAM :
12 cm (5″) 4.7 GB, 12 cm (5″) 9.4 GB, 8 cm (3″) 2.8 GB
12 cm (5″) 4.7 GB (Ver. 2.1/3×-SPEED DVD-RAM Revision 1.0)
DVD-R :
12 cm (5″) 4.7 GB, 8cm (3″) 1.4 GB (for General Ver. 2.0)
12 cm (5″) 4.7 GB (for General Ver. 2.0/4×–SPEED DVD-R Revision 1.0)

Recording time:
Maximum 8 hours (with 4.7 GB discs) :
XP: Approx. 1 hour
SP: Approx. 2 hours
LP: Approx. 4 hours
EP: Approx. 6 hours/8 hours
Maximum 142 hours (with built-in 80 GB HDD) :
XP: 17 hours
SP: 34 hours
LP: 68 hours
EP: 106 hours/142 hours

Playable discs:
DVD-RAM :
12 cm (5″) 4.7 GB, 12 cm (5″) 9.4 GB, 8 cm (3″) 2.8 GB
12 cm (5″) 4.7 GB (Ver. 2.1/3×-SPEED DVD-RAM Revision 1.0)
DVD-R :
12 cm (5″) 4.7 GB, 8cm (3″) 1.4 GB (for General Ver. 2.0)
12 cm (5″) 4.7 GB (for General Ver. 2.0/4×–SPEED DVD-R Revision 1.0)
DVD-Video, DVD-Audio, Video CD, CD-Audio (CD-DA)
CD-R/CD-RW (MP3, CD-DA, Video CD formatted discs)

Video system
TV system: NTSC system, 525 lines, 60 fields
Recording system: MPEG2 (Hybrid VBR)
Input terminal: Line (pin jack) ×3
S connector (Y, C) ×3
Output terminal: Line (composite video) ×2
S connector (Y, C) ×2
Component video output (480P/480i)

Audio system
Recording system: Dolby Digital (XP/SP/LP/EP)
Linear PCM (XP only)
Number of channels: Recording: 2 channels
Playback: 5.1 channels
(FL, FR, Center, SL, SR, Subwoofer)

■ SPEAKER SECTION

●Front speakers SB-FS1500
Type: 2 way, 3 speaker system, Bass-ref.
Woofer: 6.5 cm ($2^{1}/_{2}$″) CONE type×2
Tweeter: 6 cm ($2^{3}/_{8}$″) RING SHAPED DOME type
Impedance/Input power (IEC): 4 Ω/70 W (Max)
Output sound pressure level: 84 dB/W (1.0 m)
Frequency range: 100 Hz–50 kHz (−16 dB)
120 Hz–45 kHz (−10 dB)
Dimensions (W×H×D):
250 mm×1122.5 mm (Max)/715.5 mm (Min)×247 mm
[$9^{27}/_{32}$″×$44^{3}/_{16}$″ (Max)/$28^{5}/_{32}$″ (Min)×$9^{23}/_{32}$″]
Speaker height adjustment range: 1122.5–715.5 mm
($44^{3}/_{16}$″–$28^{5}/_{32}$″)
Mass: Approx. 4.2 k**g** (9.3 lb.)

●Center speaker SB-PC1500
Type: 2 way, 3 speaker system, Bass-ref.
Woofer: 6.5 cm ($2^{1}/_{2}$″) CONE type×2
Tweeter: 6 cm ($2^{3}/_{8}$″) RING SHAPED DOME type
Impedance/Input power (IEC): 4 Ω/260 W (Max)※
Output sound pressure level: 84 dB/W (1.0 m)
Frequency range: 100 Hz–50 kHz (−16 dB)
120 Hz–45 kHz (−10 dB)
Dimensions (W×H×D): 320 mm×88 mm×109 mm
($12^{19}/_{32}$″×$3^{15}/_{32}$″×$4^{9}/_{32}$″)
Mass: Approx. 1.5 kg (3.3 lb.)
※ Ratings with the low cut filter equipped amplifier.

●Surround speakers SB-PS1500
Type: 2 way, 2 speaker system, Bass-ref.
Woofer: 6.5 cm ($2^{1}/_{2}$″) CONE type
Tweeter: 6 cm ($2^{3}/_{8}$″) RING SHAPED DOME type
Impedance/Input power (IEC): 4 Ω/70 W (Max)
Output sound pressure level: 80 dB/W (1.0 m)
Frequency range: 95 Hz–50 kHz (−16 dB)
110 Hz–45 kHz (−10 dB)
Dimensions (W×H×D): 202 mm×548 mm×200 mm
($7^{15}/_{16}$″×$21^{9}/_{16}$″×$7^{7}/_{8}$″)
Mass: Approx. 2.3 kg (5.1 lb.)

●Subwoofer SB-WA1500
Type: 1 way, 1 speaker system, Bass-ref.
Superwoofer: 20 cm ($7^{7}/_{8}$″) CONE type
Output sound pressure level: 84 dB/W (1.0 m)
Frequency range: 34 Hz–220 Hz (−16 dB)
38 Hz–190 Hz (−10 dB)
Dimensions (W×H×D): 285 mm×418 mm×475 mm
($11^{7}/_{32}$″×$16^{15}/_{32}$″×$18^{11}/_{16}$″)
Mass: Approx. 14.4 kg (31.7 lb.)

■ GENERAL

Power supply: AC 120 V, 60 Hz
Power consumption: Main unit SA-HT1500: 36 W
Subwoofer SB-WA1500: 320 W
Dimensions (W×H×D) (Main unit SA-HT1500)**:**
448 mm×81.5 mm×372 mm
($17^{5}/_{8}$″×$3^{3}/_{16}$″×$14^{5}/_{8}$″)
Mass (Main unit SA-HT1500)**:** Approx. 5.8 k**g** (12.8 lbs)
(Dimensions and Mass do not include the speakers.)
Operating temperature range: 5 °C–40 °C (41 °F–104 °F)
Operating humidity range: 10 %–80 % RH (no condensation)

Power consumption in standby mode:
Main unit SA-HT1500 Approx. 14 W
(When FL display is off except timer recording)

Note
Specifications are subject to change without notice.
Mass and dimensions are approximate

CPRM (Content Protection for Recordable Media)
CPRM is technology used to protect broadcasts that are allowed to be recorded only once. Such broadcasts can be recorded only with CPRM compatible recorders and discs.

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multi-channel audio. A large amount of audio information can be recorded on one disc using this method.
When recording on this unit Dolby Digital (2 channel) is the default audio.

Dolby Pro Logic II
Dolby Pro Logic II is an advanced decoder that derives 5 channel surround (Left, Center, Right, Left and Right Surround) from any stereo program material, whether or not it has been specifically Dolby Surround encoded. Pro Logic II provides two full-range surround channels, as opposed to Pro Logic's single surround channel.

Down-mixing
This is the process of remixing the multi-channel audio found on some discs into two channels output. Some discs prohibit down-mixing and this unit can then only output the front two channels.

Drive
In the instance of this unit, this refers to the hard disk (HDD) and DVD. These perform the reading and writing of data.

DTS (Digital Theater Systems)
This surround system is used in many movie theaters. There is good separation between the channels, so realistic sound effects are possible.

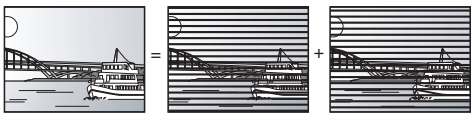
Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs. Dynamic range compression means reducing the gap between the loudest and softest sounds. This means you can listen at low volumes but still hear dialog clearly.

Film and video
DVD-Video are recorded using either film or video. This unit can determine which type has been used, then uses the most suitable method of progressive output.
Film is 24 or 30 frames per second, with motion picture film generally being 24 frames per second.
Video is 60 fields per second (two fields making up one frame).

Finalize
A process that makes play of a recorded CD-R, CD-RW or DVD-R etc. possible on equipment that can play such media. You can finalize DVD-R on this unit.
You cannot record onto or edit finalized discs.

Formatting
Formatting is the process of making media such as DVD-RAM recordable on recording equipment.
You can format the HDD and DVD-RAM on this unit.
Formatting irrevocably erases all recordings on the disc.

Frames and fields
Frames refer to the single images that constitute the video you see on your television. Each frame consists of two fields.



Frame Field Field

- A frame still shows two fields, so there may be some blurring, but picture quality is generally better.
- A field still shows less picture information so it may be rougher, but there is no blurring.

HDD (Hard disk drive)
This is a mass data storage device used in computers, etc. A disk with a surface that has been treated with magnetic fluid is spun and a magnetic head is brought in close proximity to facilitate the reading and writing of large amounts of data at high speed.

LPCM (Linear PCM)
These are uncompressed digital signals, similar to those found on CDs. LPCM sound is available when recording in XP mode.

MP3 (MPEG Audio Layer 3)
An audio compression method that compresses audio to approximately one tenth of its size without any considerable loss of audio quality. You can play MP3 you have recorded onto CD-R and CD-RW.

Pan&Scan/Letterbox
In general, DVD-Video are produced with the intention that they be viewed on a widescreen television (16:9 aspect ratio), so images often don't fit regular (4:3 aspect ratio) televisions. Two styles of picture, "Pan & Scan" and "Letterbox", deal with this problem.

Pan&Scan: The sides are cut off so the picture fills the screen.

Letterbox: Black bands appear at the top and bottom of the picture so the picture itself appears in an aspect ratio of 16:9.

Playback control (PBC)
If a Video CD has playback control, you can select scenes and information with menus. (This unit is compatible with version 2.0 and 1.1.)

Progressive/Interlace
NTSC, the video signal standard, has 480 interlaced (I) scan lines, whereas progressive scanning uses twice the number of scan lines. This is called 480P.
Using progressive output, you can enjoy the high-resolution video recorded on media such as DVD-Video.
Your television must be compatible to enjoy progressive video.

Protection
You can prevent accidental erasure by setting writing protection or erasure protection.

Sampling frequency
Sampling is the process of converting the heights of sound wave (analog signal) samples taken at set periods into digits (digital encoding). Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

VBR (Variable bitrate)
This is a method of video recording that adjusts the bit rate according to video signal.

Language code list

Enter the code with the numbered buttons.

Abkhazian:	6566	Catalan:	6765	Gujarati:	7185	Lingala:	7678	Rhaeto-Romance:	8277	Tamil:	8465
Afar:	6565	Chinese:	9072	Hausa:	7265	Lithuanian:	7684	Romanian:	8279	Tatar:	8484
Afrikaans:	6570	Corsican:	6779	Hebrew:	7387	Macedonian:	7775	Russian:	8285	Telugu:	8469
Albanian:	8381	Croatian:	7282	Hindi:	7273	Malagasy:	7771	Samoan:	8377	Thai:	8472
Ameharic:	6577	Czech:	6783	Hungarian:	7285	Malay:	7783	Sanskrit:	8365	Tibetan:	6679
Arabic:	6582	Danish:	6865	Icelandic:	7383	Malayalam:	7776	Scots Gaelic:	7168	Tigrinya:	8473
Armenian:	7289	Dutch:	7876	Indonesian:	7378	Maltese:	7784	Serbian:	8382	Tonga:	8479
Assamese:	6583	English:	6978	Interlingua:	7365	Maori:	7773	Serbo-Croatian:	8372	Turkish:	8482
Aymara:	6588	Esperanto:	6979	Irish:	7165	Marathi:	7782	Shona:	8378	Turkmen:	8475
Azerbaijani:	6590	Estonian:	6984	Italian:	7384	Moldavian:	7779	Sindhi:	8368	Twi:	8487
Bashkir:	6665	Faroese:	7079	Japanese:	7465	Mongolian:	7778	Singhalese:	8373	Ukrainian:	8575
Basque:	6985	Fiji:	7074	Javanese:	7487	Nauru:	7865	Slovak:	8375	Urdu:	8582
Bengali; Bangla:	6678	Finnish:	7073	Kannada:	7578	Nepali:	7869	Slovenian:	8376	Uzbek:	8590
Bhutani:	6890	French:	7082	Kashmiri:	7583	Norwegian:	7879	Somali:	8379	Vietnamese:	8673
Bihari:	6672	Frisian:	7089	Kazakh:	7575	Oriya:	7982	Spanish:	6983	Volapük:	8679
Breton:	6682	Galician:	7176	Kirghiz:	7589	Pashto, Pushto:	8083	Sundanese:	8385	Welsh:	6789
Bulgarian:	6671	Georgian:	7565	Korean:	7579	Persian:	7065	Swahili:	8387	Wolof:	8779
Burmese:	7789	German:	6869	Kurdish:	7585	Polish:	8076	Swedish:	8386	Xhosa:	8872
Byelorussian:	6669	Greek:	6976	Laotian:	7679	Portuguese:	8084	Tagalog:	8476	Yiddish:	7473
Cambodian:	7577	Greenlandic:	7576	Latin:	7665	Punjabi:	8065	Tajik:	8471	Yoruba:	8979
		Guarani:	7178	Latvian, Lettish:	7686	Quechua:	8185			Zulu:	9085

Error messages

On the television

		Page
Cannot finish recording completely.	●The program was copy-protected. ●The HDD or disc may be full.	— —
Cannot play.	●You inserted an incompatible disc (Discs recorded in PAL video etc.).	—
Cannot record on the disc.	●The disc may be dirty or scratched.	**10**
Please check the disc.		
Unable to format.		
Cannot record. Disc is full.	●Create space by erasing any unnecessary titles. HDD RAM ●Use a new disc. RAM DVD-R	**22, 27, 35**
Cannot record. Maximum number of titles exceeded.		—
Error has occurred. Please press ENTER.	●Press [ENTER] to start recovery process. You cannot operate the unit while it is recovering ("SELF CHECK" appears on the unit's display).	—
No disc	●The disc may be upside down.	—
Please change the disc.	●There may be a problem with the disc. Press [▲ OPEN/CLOSE] on the main unit to remove it and check it for scratches or dirt. (The unit turns off automatically after you open the tray.)	**10**
This is a non-recordable disc.	●The unit cannot record on the disc you inserted. Insert a DVD-RAM or unfinalized DVD-R.	—
This disc is not formatted properly.	●You inserted an unformatted DVD-RAM. Format the disc with this unit.	**35**
⃠	●The operation is prohibited by the unit or disc.	—

On the unit's display

CHK REMOTE □ ("□" stands for a number.)	●The remote control and main unit are using different codes. Change the code on the remote control. Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.	**8**
HARD ERR	●If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.	—
HDD SLP	●In order to extend HDD life, the HDD is in SLEEP mode. Press [HDD] to activate.	**10**
NO READ	●The disc is dirty or badly scratched. The unit cannot record, play, or edit. ●You have used a DVD-RAM/PD lens cleaner and it has finished. Press [▲ OPEN/CLOSE] on the main unit to eject the disc.	**10** —
PLEASE WAIT	●Displayed when the unit is started. This is not a malfunction.	—
SELF CHECK	●There was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. Wait until the message disappears.	—
UNSUPPORT	●You have inserted a disc the unit cannot play or record on. ●The signal input into the L1 OPTICAL IN terminal is not Dolby Digital or Linear PCM.	**9** —
U14	●The unit is hot. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears. Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.	—
U99	●The unit fails to operate properly. Press [POWER ⏻/I] on the main unit to switch the unit to standby. Now press [POWER ⏻/I] on the main unit again to turn the unit on.	—
AF F61	●Check and correct the speaker cord connections. If this does not fix the problem, there is a power supply problem. Consult the dealer.	**Setup Guide**
DIGITAL UNLOCK	●There is no signal input to the L1 OPTICAL IN terminal. ➡Make sure to check the connections and if the power of the connected equipment is turned on.	—

Troubleshooting guide

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the "Customer Services Directory" on page 51 if you reside in the U.S.A., or refer to the "Product information" on Backcover if you reside in Canada.

The following do not indicate a problem with this unit:

- ●Regular disc rotating sounds. The sound of disc rotating may become louder especially when finalizing a DVD-R.
- ●Poor reception due to atmospheric conditions.
- ●Image disturbance during search.
- ●Interruptions to reception due to periodic satellite broadcasting breaks.
- ●A sound is heard when the HDD goes into the SLEEP mode, or operations are slow to respond in SLEEP mode.

Power

		Page
No power.	●Insert the AC power supply cord and system cable securely.	Setup Guide
The unit switches to the standby mode.	●This is a power saving feature. Change "Off Timer" in the SETUP menu, if you would prefer. ●One of the unit's safety devices is activated. Press [POWER ⏻/I] on the main unit to turn the unit on.	**39** —

Displays

		Page
The display is dim.	●Change “Front Display” in the SETUP menu.	**41**
“12:00” is flashing on the unit’s display.	●Set the clock.	**7**
Compared to the actual recorded time, the remaining time displayed is less.	●The displayed recording/play time is converted from the number of frames at 29.97 frames (equal to 0.999 seconds) to one second. There will be slight a difference between the time displayed and the actual elapsed time (e.g., actual one-hour elapsed time may display as approximately 59 minutes 56 seconds). This does not affect the recording.	**—**
The time recorded on the disc and the available time shown do not add up.	●Times shown may disagree with actual times. ●More disc space than the actual recording time is used after recording or editing the DVD-R 200 times or more.	**—** **—**
The play time shown for MP3 does not agree with the actual time.	●While searching, the elapsed time may not display correctly. ●Even if you erase recorded content from the DVD-R, there is no increase in disc space.	**—** **—**

TV screen and video

Television reception worsens after connecting the unit.	●This can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from audio-visual suppliers.	**—**
Status messages do not appear.	●Select “Automatic” in “Status Messages” in the SETUP menu.	**41**
The blue background does not appear.	●Select “On” in “Blue Background” in the SETUP menu.	**41**
The 4:3 aspect ratio picture expands left and right.	●Use the television to change the aspect. If your television does not have that function, set “Progressive” in the Video menu to “OFF”.	**25**
Screen size is wrong.	●Check the settings for “TV Type”, “4:3 TV Settings for DVD-Video” or “4:3 TV Settings for DVD-RAM” in the SETUP menu.	**41**
There is a lot of after-image when playing video.	●Change the settings for “3D NR”, and “Integrated DNR” to “0” or turn “MPEG-DNR” off if it is on.	**25**
When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.	●Set “Progressive” in the Video menu to “OFF”. This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlace output.	**25**
There is no apparent change in picture quality when adjusted with the Video menu in the on-screen menus.	●The effect is less perceivable with some types of video.	**—**
The images from this unit do not appear on the television.	●Make sure that the television is connected to the VIDEO OUT terminal, S-VIDEO OUT terminal or COMPONENT VIDEO OUT terminals on this unit.	**Setup Guide**
Picture is distorted.	●Make sure that the television’s input setting (e.g., VIDEO 1) is correct. ●The television isn’t compatible with progressive signals. Press and hold [■] and [TIME SLIP] on the main unit at the same time for about 5 seconds. The setting will change to interlace.	**—** **—**

Radio and sound

Cannot select the tuner	●Check and see if the subwoofer’s AC power supply cord is connected.	**Setup Guide**
Noise is heard. **“ST” is flashing or doesn’t light.** **Sound is distorted.**	●Adjust the position of the FM or AM antenna. ●Use an FM outdoor antenna. ●Press [SHIFT] + [FM MODE] to set to “MONO”.	**—** **36** **36**
A beat sound is heard.	●Turn the television off or separate it from the unit.	**—**
A low hum is heard during AM broadcasts.	●Separate the antenna from other cables and cords.	**—**
The radio cannot be tuned in.	●Turn off nearby televisions, video cassette recorders, satellite receivers and computers.	**—**
All programmed radio presets are erased. **Returns to the original setting even after making changes to the sound field system settings.**	●Radio and sound field system settings are stored to memory after pressing [⏻ POWER]. Do not remove the AC power supply cords until “BYE” disappears from the unit’s display.	**—**
No sound. **Low volume.** **Distorted sound.** **Cannot hear the desired audio type.**	●Check the connections. ●Press [AUDIO] to select the audio. ●The disc may have a restriction on the method of audio output. If “D.MIX” flashes in the display when playing multi-channel DVD-Audio, only audio for the two front channels will be output. Refer to the disc’s jacket. DVD-A ●Turn the volume up. ●Turn muting off. ●Switch off the unit, determine and correct the cause, then switch the unit on. Causes include: –Shorting (bare wires touching) of positive and negative speaker wires. –Using speakers with an impedance lower than that rated for this unit. –Straining of the speakers through excessive volume or power. –Using the unit in a hot environment without proper ventilation. ●“SFC AV/MOVIE” and “SFC MUSIC” do not work with muiti-channel discs. ●“SFC AV/MOVIE” does not work with 1 ch DVD-video discs. ●“SFC AV/MOVIE” or “SFC MUSIC” will be cancelled when: –A source switches to multi-channels. –“5.1 channel” is selected on disc menu. It is activated again when a source switches to 2-channels, or “Stereo” is selected on disc menu.	**Setup Guide** **13, 22** **—** **—** **5** **—** **—** **—** **—**

Continued on next page

Radio and sound

		Page
Cannot switch audio.	●You cannot switch the audio in the following cases. –When a DVD-R disc is in the disc tray while DVD drive is selected. –When the recording mode is XP and “Audio for XP Recording” is set to “LPCM”. –When “DVD-R High-Speed Recording” is set to “On” ●You cannot change the audio type when playing a DVD-R. (You can select “Main” or “SAP” in “Select MTS” in the SETUP menu before recording.) ●There are discs which audio cannot be changed because of how the disc was created.	— **40** —
Humming heard during play.	●An AC power supply cord or fluorescent light is near the subwoofer. Keep other appliances and cords away from the subwoofer.	—
Beginning of audio is cut off when receiving audio from a digital broadcast using the optical connection.	●When using the “L1 AUTO” setting, sound may be cut off when the signal is being switched automatically between Dolby Dig (o)T5(0pC15.2(ben A)34.M(aut)9(.)-16Sei)-1.6(ght)-6.io(o)-6.2(o)-1.2L1(at)9(io)T5	

Operation

Recording/Timer recording/Transferring (Dubbing)

Recording/Timer recording/Transferring (Dubbing)

		Page
When transferring (dubbing), it takes a long time even when high speed mode is selected.	●Use a disc that is compatible with high speed recording. Even if the disc is high speed recording compatible, the maximum speed recording rating may not be possible due to the condition of the disc. ●It takes longer than normal to transfer (dub) many titles. ●You cannot high speed transfer (dub) to DVD-R titles longer than 6 hours when using other Panasonic DVD recorders that are not compatible with EP (8 hour) mode recording.	— — —
An unusually loud sound coming from the rotating DVD-R.	●When recording or high speed transferring (dubbing) to a DVD-R, the sound of the disc rotating may be louder than normal; however, this is not a problem.	—

TV Guide On Screen™ system

Television program list does not display when [TV GUIDE] is pressed.	●Leave the unit turned off over night. ●Check the connection and set up the TV Guide On Screen™ system again. ●Consult your service provider if you are using a cable TV box. ●Television program list is not available in your area. Set the unit using "Auto Channel Setting". Note that you can only set timer recording manually after you set the unit using "Auto Channel Setting".	— Setup Guide, 6 — 41
"Cable code -INCOMPLETE-" appears in the TV Guide On Screen™ system setup.	●The unit cannot find the correct IR code for the cable TV box. Consult your service provider.	—
As soon as the unit is turned on, and when you try to start timer recording, the TV Guide On Screen™ system setup begins.	●Even if you do not want to use the TV Guide On Screen™ system, you need to complete the TV Guide On Screen™ system setup (until [ENTER] is pressed after the "Watch TV" message screen is displayed). It will not be displayed after this point.	6
Several days of television program listings are blank.	●Immediately after beginning use there are several days of blank listings. You can display program listings up to 8 days forward without any blank listings by downloading program lists continuously over several days.	—
Channel changes even when no operation is performed.	●When the unit is connected to a cable TV box, the cable TV box channel changes while the unit is turned off in order to download the television program list.	—

Play

Play fails to start even when [▶] (PLAY) is pressed. **Play starts but then stops immediately.**	●Insert the disc correctly with the label facing up. ●You tried to play a blank DVD-RAM/DVD-R, or disc unplayable on this unit. ●You may be able to transfer (dub) a "One time only recording" title that was recorded to DVD-RAM using a different Panasonic DVD Recorder to this unit's HDD, but play is not possible due to copyright protection. ●When recording to DVD-RAM using EP (8H) mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use EP (6H) mode.	20 9 — 40
Audio and video momentarily pause.	●This occurs between play list chapters. ●This occurs between chapters and with partially deleted titles on finalized DVD-R that have been transferred (dubbed) using the high speed mode.	— —
DVD-Video is not played.	●Some DVD-Video cannot be played when you change the ratings level.	39
Alternative soundtrack and subtitles cannot be selected.	●The languages are not recorded on the disc. ●You may have to use the disc's menus to select languages.	— —
No subtitles.	●When progressive output is on, closed captions cannot be displayed. ●Subtitles are not recorded on the disc. ●Turn the subtitles on.	— — 24
Angle cannot be changed.	●Angles can only be changed during scenes where different angles are recorded.	—
You have forgotten your ratings password.	●While the disc tray is open, press [DVD] then press and hold [I◀◀/◀◀] and [▶▶/▶▶I] on the main unit at the same time for 5 or more seconds.	—
Quick View does not work.	●This does not work if the setting is "Off" in "Search Audio & PLAY ×1.3". ●This does not work when audio is other than Dolby Digital. ●This does not work when recording is in XP or FR mode. RAM	40 — —
The resume play function does not work.	●This function only works when "PLAY" is flashing in the unit display. ●Memorized positions are canceled when the unit is turned off or when the tray is opened. The memorized position on the play list is also canceled when the play list and title are edited.	— —

Edit

Cannot format.	●The disc is dirty. Use a special cleaner and wipe clean. ●You tried formatting a disc that is not compatible with this unit.	10 9
Cannot create chapters. **Cannot mark the start point or the end point during "Shorten" operation.**	●The unit writes the chapter division information to the disc when you turn it off or remove the disc. The information is not written if there is an interruption to the power before this. ●These operations are not possible with still pictures. ●You cannot set points if they are too close to each other. You cannot set an end point before a start point.	— — —
Cannot erase chapters.	●When the chapter is too short to erase, use "Combine Chapters" to make the chapter longer.	27
The available recording time doesn't increase even after erasing recordings on the disc.	●Available recording space on the DVD-R does not increase even after erasing previously recorded titles.	—
Cannot create a play list.	●You cannot select all the chapters at once in a title if the title also includes still pictures. Select them individually.	—

Frequently asked questions

Set up		Page
The television has both S-VIDEO IN terminal and COMPONENT VIDEO IN terminals. Which terminal should I connect with?	●We recommend the COMPONENT VIDEO IN terminal. Component signal outputs the color difference signals (P_B/P_R) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colors. If the television is compatible with progressive output, a high quality picture can be output because this unit's component video output terminal outputs a progressive output signal.	Setup Guide
Is my television progressive output compatible?	●All Panasonic televisions that have 480P input terminals are compatible. Consult the manufacturer if you have another brand of television.	—
Disc		
Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?	●You can play them if the video standard is NTSC. ●However, you cannot play DVD-Video if their region number does not include "1" or "ALL".	— —
Can a DVD-Video that does not have a region number be played?	●The DVD-Video region number indicates the disc conforms to a standard. You cannot play discs that do not have a region number.	—
Please tell me about DVD-R and DVD-RW compatibility with this unit.	●This unit records and plays DVD-R. However, you cannot record onto DVD-R discs that are finalized. ●This unit also records and plays the high speed recording compatible discs. ●This unit does not record or play DVD-RW.	— — —
Please tell me about CD-R and CD-RW compatibility with this unit.	●You can play CD-R and CD-RW on this unit that are created using a compatible format. ●You cannot write to a CD-R or CD-RW with this unit.	**9, 23** —
Recording		
Can I record from a commercially purchased video cassette or DVD?	●Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible.	—
Can a DVD-R recorded on this unit be played on other equipment?	●You can play on DVD-R compatible players after finalizing the disc on this unit; however, due to the condition of the recording, play may not be possible.	**35**
How many times can I write to a DVD-RAM disc?	●You can write to the disc approximately 100,000 times depending upon the conditions of use.	—
Can I high speed transfer to a disc?	●You can record up to a 32× recording speed to DVD-R and up to 24× recording speed to DVD-RAM when using a high speed compatible disc.	**31**
Can I record digital audio signals using this unit?	●You cannot record digital signals. You can record analog audio signals with L1 AUDIO terminal connections.	**43**
Can I switch to MTS during recording?	●With HDD and DVD-RAM, you can, and the audio recorded also changes. Just press [AUDIO]. ●With DVD-R, you cannot. Change before recording with "Select MTS" in the SETUP menu.	**13** **40**
TV Guide On Screen™ system		
I do not want TV Guide On Screen™ system to automatically appear on screen.	●Select "Off" in "Review options" menu, so that TV Guide On Screen™ system appears only when you press [TV GUIDE].	**19**
I do not want to use TV Guide On Screen™ system.	●Set the unit with "Auto Channel Setting". Note that you can set timer recording only manually after you set the unit with "Auto Channel Setting".	**41**

Limited Warranty (ONLY FOR CANADA)

Panasonic Canada Inc.
5770 Ambler Drive, Mississauga, Ontario L4W 2T3

PANASONIC/TECHNICS PRODUCT—LIMITED WARRANTY

Panasonic Canada Inc. warrants this product to be free from defects in material and workmanship and agrees to remedy any such defect for a period as stated below from the date of original purchase.

Panasonic Home Theater System with DVD Recorder One (1) year, parts and labour

LIMITATIONS AND EXCLUSIONS

This warranty does not apply to products purchased outside Canada or to any product which has been improperly installed, subjected to usage for which the product was not designed, misused or abused, damaged during shipping, or which has been altered or repaired in any way that affects the reliability or detracts from the performance, nor does it cover any product which is used commercially. Dry cell batteries are also excluded from coverage under this warranty.
This warranty is extended to the original end user purchaser only. A purchase receipt or other proof of date of original purchase is required before warranty service is performed.

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In certain instances, some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or the exclusion of implied warranties, so the above limitations and exclusions may not be applicable.

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For product operation and information assistance, please contact your Dealer or our Customer Care Centre at: Telephone #: (905) 624-5505 Fax #: (905) 238-2360 Web: www.panasonic.ca

For product repairs, please contact one of the following:

●Your Dealer who will inform you of an authorized Servicentre nearest you.
●Our Customer Care Centre at (905) 624-5505 or www.panasonic.ca
●A Panasonic Factory Servicentre listed below:

Richmond, British Columbia	Calgary, Alberta	Mississauga, Ontario	Lachine, Québec
Panasonic Canada Inc.	Panasonic Canada Inc.	Panasonic Canada Inc.	Panasonic Canada Inc.
12111 Riverside Way	6835-8th St. N. E.	5770 Ambler Dr.	3075, rue Louis A. Amos
Richmond, BC	Calgary, AB	Mississauga, ON	Lachine, QC
V6W 1K8	T2E 7H7	L4W 2T3	H8T 1C4
Tel: (604) 278-4211	Tel: (403) 295-3955	Tel: (905) 624-8447	Tel: (514) 633-8684
Fax: (604) 278-5627	Fax: (403) 274-5493	Fax: (905) 238-2418	Fax: (514) 633-8020

IF YOU SHIP THE PRODUCT TO A SERVICENTRE

Carefully pack and send prepaid, adequately insured and preferably in the original carton.
Include details of the defect claimed, and proof of date of original purchase.

Limited Warranty (ONLY FOR U.S.A.)

Panasonic Consumer Electronics Company,
Division of Matsushita Electric Corporation of America
One Panasonic Way Secaucus, New Jersey 07094

Panasonic Sales Company, Division of Matsushita Electric of Puerto Rico, Inc.
Ave. 65 de Infantería, Km. 9.5
San Gabriel Industrial Park, Carolina, Puerto Rico 00985

Panasonic Audio Products Limited Warranty

Limited Warranty Coverage
If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

Product or Part Name	Parts	Labor
Audio Products (except items listed below)	One (1) year	One (1) year
All Audio Racks (cabinets)	Thirty (30) days	Not Applicable
Stand Alone Speakers, Subwoofer Speakers	Three (3) years	Three (3) years
USB Reader-Writer, Personal Computer Card Adapters (in exchange for defective item)	One (1) year	Not Applicable
Accessories: Headphones, Cartridges, Microphones, Adapters	Ninety (90) days	Ninety (90) days
Rechargeable Batteries, DVD-R/-RAM Discs (in exchange for defective item)	Ten (10) days	Not Applicable
SD Memory Cards, Rechargeable Battery Packs (in exchange for defective item)	Ninety (90) days	Not Applicable

During the "Labor" warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must carry-in or mail-in your product during the warranty period. If non-rechargeable batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is". A purchase receipt or other proof of the original purchase date is required for warranty service.

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For Carry-In or Mail-In Service in the United States call 1-800-211-PANA (1-800-211-7262) or visit Panasonic web site: http://www.panasonic.com
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This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or commercial use (such as in a hotel, office, restaurant, or other business), rental use of the product, service by anyone other than a Factory Servicenter or other Authorized Servicer, or damage that is attributable to acts of God.

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PARTS AND SERVICE WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY ARE YOUR RESPONSIBILITY.

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You may also contact us directly at:
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Panasonic Services Company
20421 84th Avenue South, Kent, WA 98032
(We Accept Visa, MasterCard, Discover Card, American Express, and Personal Checks)

For hearing or speech impaired TTY users, TTY : 1-866-605-1277

Service in Puerto Rico

Matsushita Electric of Puerto Rico, Inc. Panasonic Sales Company
Factory Servicenter:
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Phone (787)750-4300, Fax (787)768-2910

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